TEXTILE WORLD

AUGUST • 1944

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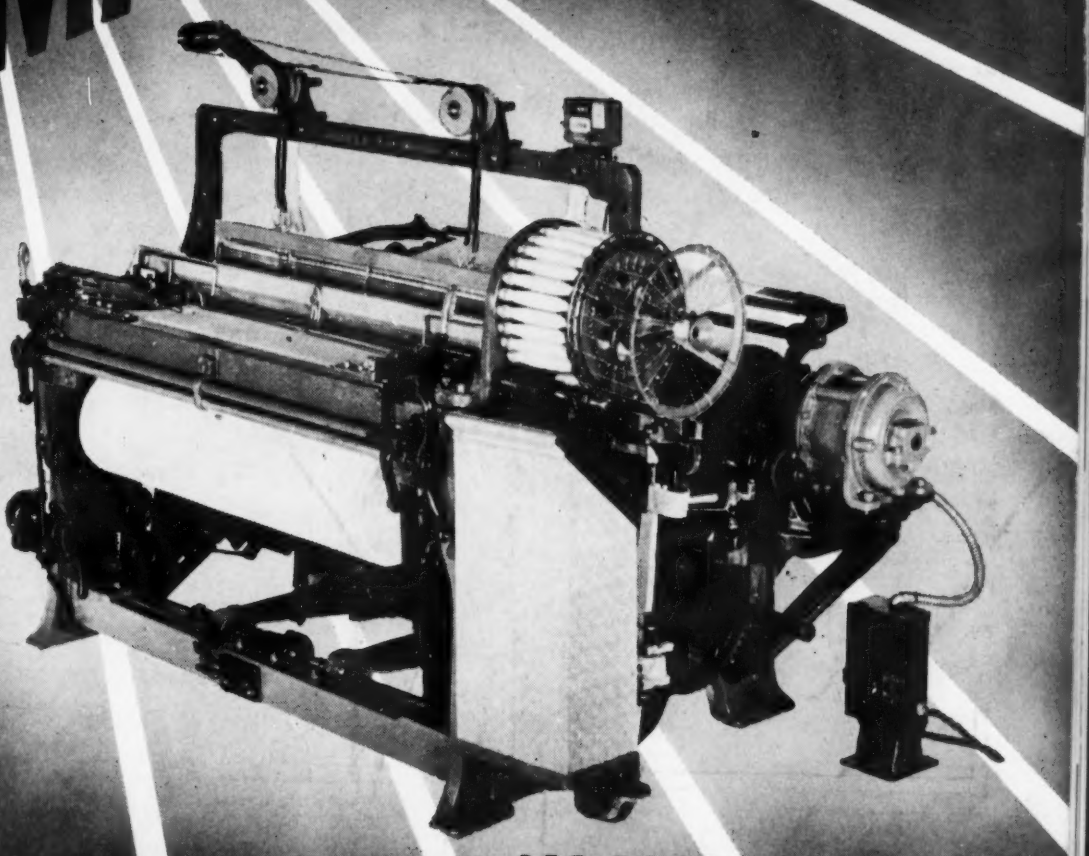
DETROIT

50 YEARS OF AUTOMATIC WEAVING



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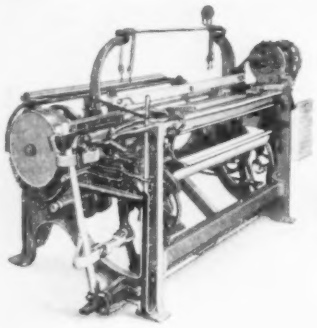
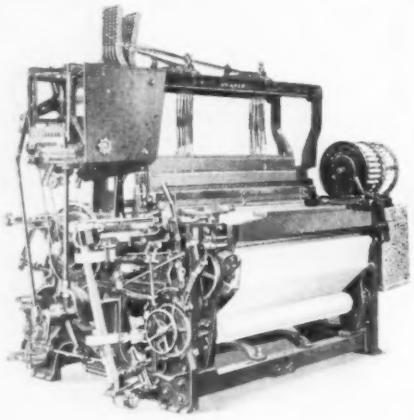
50th Anniversary



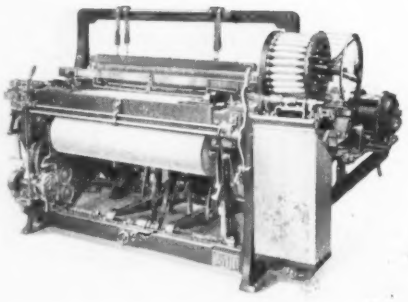
1894 — First Loom Shipped in August 1894. It Took 8 Years of Research, Constant Invention, Design, Tests and Redesign, and 180 Patents to Produce the First Northrop Loom.

1895-1929 — We Developed 17 Loom Models under 2160 Patents. Some of the Models—like the E—Underwent Steady Change from Year to Year as Improvements were Made.

1930-1944 — Six Models of X Series High Speed Looms and One Super High Speed Loom Under More thar 500 New Patents.



1939 — XD High Speed Rayon Loom.
Best Loom for One-Shuttle Rayon Weaves Ever Built.
Result of 14 Years of Research and Experiment in Rayon Weaving.



1944 — Latest Version of X-2 Super High Speed Loom for Cotton and Other Fabrics as Improved by Wartime Research.
Into It We Have Built the Results of 50 Years of Experience in Building Automatic Looms.

DRAPER CORPORATION

Hopedale Massachusetts

TEXTILE WORLD. Vol. 94, No. 8, August, 1944. Published monthly by McGRAW-HILL PUBLISHING CO., INC., (Bragdon, Lord & Nagle Division). Publication Office, 99-129 North Broadway, Albany, N. Y. RETURN POSTAGE GUARANTEED. Editorial and Executive Offices, 330 West 42nd Street, New York, (18) N. Y. Allow at least ten days for change of address.
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of the Northrop Loom

Fifty years ago this month, in August, 1894, the first Northrop Looms to be sold to a mill were shipped from Hopedale to Queen City Cotton Mills at Burlington, Vt. There were 792 looms on the order.

This was the beginning of a revolution in the art of weaving throughout the world and led to the tremendous expansion of the textile industry in this Country.

The Northrop loom was not the result of a chance invention. In 1886 when the Draper business was 70 years old, the three Draper brothers of the third generation decided to undertake the design and manufacture of an automatic loom. There were many patents of automatic devices but not one of them had ever proved practical; nor was any of them in successful operation anywhere.

They started from scratch with their large force of inventors and skilled mechanics who had already given them hundreds of patents on improved machines that had made the Drapers among the leading builders of textile machinery.

The first tangible results of this carefully planned campaign of invention were two shuttle-changing looms, the Rhoades in 1888 and the Northrop in 1889. Both were given extensive mill tests in Fall River with encouraging results. In the latter year James H. Northrop conceived the idea of forcing the spent bobbin through and out of the shuttle and replacing it with a fresh bobbin of filling. As the first step to this end he constructed on October 28 of that year a self threading shuttle. Invention of the two-ring bobbin, of spring jaws to hold and release the bobbin and of the temple thread cutter came the same year.

By the end of 1891 the Northrop rotating battery and such necessary devices as a filling motion to regulate the transfer of the bobbin and a loom thread cutter were patented and given mill tests.

It became evident that a practical automatic loom must have a warp stop motion. Designing a suitable stop motion took longer and cost more than designing the battery, but in 1894 we were in position to begin the manufacture of the Northrop loom for the trade.

Looms were shipped to England and Russia in 1895 and patents taken out in England, Belgium, Germany, Russia, Austria and Spain. From that time until after World War I, Northrop Looms were built in Europe under license from Draper Company.

It is an interesting sidelight on the quality attained in the first lot of looms sold that of the 792 sent to Queen City 424 were being operated at the end of 1914.

These early looms were run 16 to the weaver. It is needless to recount here the story of the steady improvement that has brought the number of looms per weaver to 100 or more on common cotton weaves and to 40 per weaver on filament rayons and has increased from year to year both the quality and quantity per loom of the fabrics produced.

The Northrop loom was the first automatic loom. Its essential features have been accepted all over the world. After fifty years it still is the best loom in the world for weaving one-shuttle fabrics, due to the diligence and persistence of the Draper organization in striving for something better each year to offer to the textile trade.

OFFICIAL U. S. NAVY PHOTO

NEMESIS of Axis submarines, these cotton-cloudlike "L" ships are an important part of the Navy's offshore sky patrol.

Producing balloon cloth for patrol blimps, or fabrics for thousands of other war uses, operators find they can keep machinery at maximum production by lubricating with Texaco.

Texaco Spindura Oils, for example, permit higher spindle speeds and heavier packages by cushioning against vibration, resisting hunting and lagging. They assure more uniform tension and twist . . . a smoother, stronger yarn . . . by resisting oxidation and thickening. They lessen fogging and stock spoilage.

Texaco lubricants have proved so effective in service that they are definitely preferred in many fields, a few of which are listed in the panel.

Texaco Lubrication Engineering Service is available to you through more than 2300 Texaco distributing points in the 48 States. The Texas Company, 135 East 42nd Street, New York 17, N. Y.

THEY PREFER TEXACO

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and railroad cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

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Classified According to Reader Interest

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Editorial

The Kiss of DEATH

IN 1935, JAMES H. NORTHROP, retired inventor of the automatic loom, visited the Southern Textile Exposition. On this occasion he was asked by a TEXTILE WORLD editor to state which of the many accomplishments of his invention pleased him most. Without hesitation he replied that he took greatest pride in the fact that his loom had abolished the "kiss of death."

The "kiss of death" was the sucking of the thread through the eye of the shuttle by the weaver, an unsanitary practice which lead to the passing of tuberculosis germs from weaver to weaver. It is said that tuberculosis germs can be resisted by a sound body which is exposed to plenty of fresh air, is not too tired, and is otherwise healthy; but the weavers of Northrop's early days worked long hours at extremely low wages and so did not enjoy the leisure, relaxation, superior diet, and better health safeguards of the present day. Therefore, although the benefits of automatic weaving spread far beyond the weave shed itself and far beyond the textile industry as a whole—contributing, as do all great labor-saving inventions, to the raising of living standards and the advancement of civilization throughout the world—the abolishment of the "kiss of death" can be taken as roughly symbolic of the whole.

Today the automatic loom—in common with most other textile machinery—is being subjected to criticism. The textile industry itself, having become impressed by the astounding progress made in some of the newer industries and fearful of competition from the paper and plastics industries and from the projected textile industries of low-wage countries, has become self-critical. Furthermore, the engineers and scientists of other industries are becoming more interested in the textile industry. The synthetics-producing chemists, for example, have established an important market in it; and the war-inflated manufacturers of electronics and other equipment hope to do likewise in the postwar era. Such men are naturally probing this huge industry in their own self-interests.

IT IS NATURAL under such conditions that past progress is largely overlooked and that such thoughtless generalities are made as that the automatic loom is the same machine today that it was 50 years ago. This is not the fact; but the progress has been such an unostentatious, step-by-step affair that it takes an occasional summary to make clear how the loom has evolved into an inexpensive machine producing a high-quality product at an operating efficiency of close to 100%. A review serves also to indicate the point of departure for future progress. This issue, on the 50th anniversary of Northrop's invention, contains such a summary.

The loom is most often criticized for its multitude of reciprocating motions and for the fact that its shuttle travels without positive control. But weaving mechanism has not wanted for attention from first-line mechanical engineers. Although the automatic loom is only 50 years old, the power loom is over 150 years old; and throughout its entire life, in all the civilized countries on earth, mechanical geniuses have at various times turned their attention to it. But they have never changed successfully its basic principles.

The loom builders themselves are fully aware of the basic problems in the machine, and they have striven and are striving constantly to effect improvement. Success in rendering old models obsolete offers them their most attractive opportunities.

THERE IS A PERENNIAL CROP not only of circular looms but also of looms with positive shuttle control. Most of us know of past experimental models with arms which entered the shed from opposite sides and passed the shuttle from one to the other; of models which employed long fingers instead of shuttles; and of models in which shuttles or the equivalent passed through the shed in only one direction, returning over or under the shed to enter it again. All who work on the development of circular looms or of reciprocating looms in which the filling is not laid in both directions must bear in mind that when they finally perfect their mechanical inventions, they will be faced with the necessity of educating the industry and also the customers of the industry on the desirability of tubular cloth or on the unessentiality of selvages. However, the greater the task, the greater the achievement.

It is all too easy to believe, sometimes, that because an industry is old it has about reached the limit of its technological development or that it has won its place in the sun to be held without great effort forevermore. The lulling of any industry into such a state of complacency is also the "kiss of death."

Edwin S. Fowler

Longer Belt Life is one sure aid to Lower Operating Costs

. . . install Long-Lasting

TANNATE

LEATHER BELTING

The illustration shows the card room of a South Carolina cotton mill that we are proud to have had a part in equipping.

Tannate is a tough, pliable belt with unusual qualities for endurance as is attested by reports from many textile mills. It is exceptionally strong, much stronger, in fact, than most first quality oak belting. Its outstanding flexibility and firm pulley grip assures maximum power transmission so that machines are kept at top production even if the load fluctuates. Tannate is resistant to moisture, machine oils and many weak chemicals. All in all, for a long life, truly economical belt, it pays to install Tannate.

Rhoads Engineering advice has shown many textile mills the way to reduce power transmission costs. Let us help you, too.

Established 1702

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Here is what a large Mill says:

"In a test, comparing TANNATE WATERSHED LEATHER BELTS with other leading belts, TANNATE ran about 2,514 hours as compared to 336 hours, the best record for any other belting."

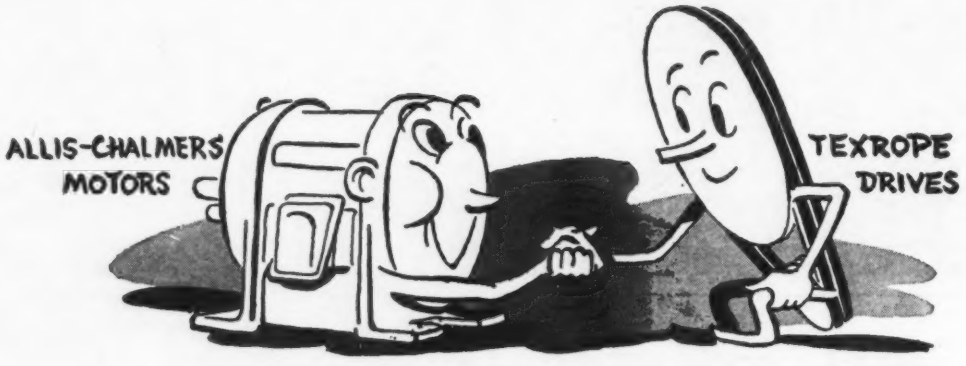
for LONGER BELT LIFE, LOWERED COSTS

Equip with RHOADS

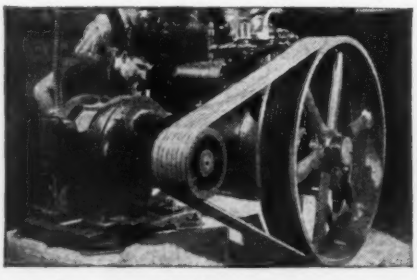
Tannate

WATERSHED LEATHER BELTING

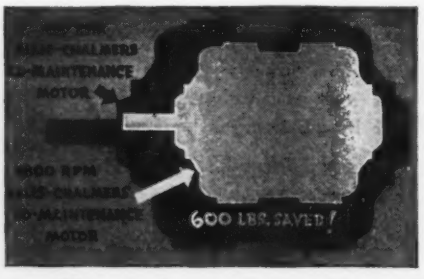
A-C "Team" Flexibility



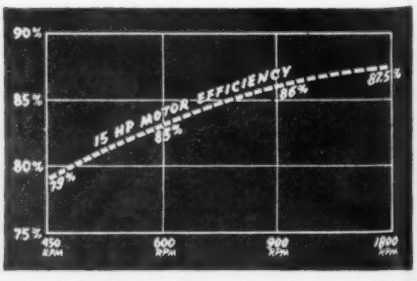
★ To drive low speed machinery with high speed motors (now that low speed motors are sharply restricted), Allis-Chalmers Texrope Drives can "gear down" motor speeds over a range of 7 to 1. As America's only builder of *both* motors and V-belt drives, Allis-Chalmers has long studied and advocated their use in proper com-



1 In most applications, an 1800 rpm motor with Texrope Drive will ably do the job of a lower-speed, direct-connected motor —at lower cost in money *and materials!*



2 When you buy an 1800 rpm instead of 450 rpm 15 hp squirrel-cage motor, for example, 600 lb are saved. And *you* save well over $200 — with drive figured in!



3 Note that efficiency rises from 79% for the 450 rpm motor to 87.5% for the 1800 rpm motor. The 1800 rpm motor saves you over 30 kw/24 hr. day.

WE WORK FOR VICTORY — WE PLAN FOR PEACE

ALLIS-

Gives You now needed

bination . . . today offers you the benefit of long pioneering experience. Texrope Drives are compact, highly efficient, protect your equipment by absorbing shock.

★ To drive a machine at different rates with a single speed motor (now that multi-speed motors are sharply restricted), Texrope Adjustable-Speed Drives give you infinite speed range up to 375%. And in Allis-Chalmers full line of Texrope Drive equipment you'll find the *right* range for your machines . . . thus avoid paying extra for more speed than you need. For engineering cooperation, feel free to call on your nearby Allis-Chalmers district office or write to Allis-Chalmers, Milwaukee 1, Wisconsin.

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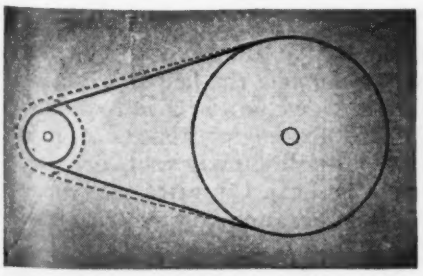
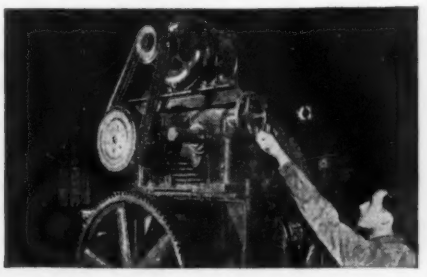


4 Infrequently needed speed changes can be had by changing from one size motor sheave to another. Juggling *complete* drives, range is 1:1 to 7:1.

5 With the Allis-Chalmers Vari-Pitch Sheave, you can increase or decrease speed by adjusting sheave diameter . . . obtaining an *unbroken* series of speeds!



6 Allis-Chalmers Vari-Pitch Speed Changer gives you infinite changes at the turn of a wheel — within 3.75 to 1. It's compact, flexible, *efficient!*

ALLIS-CHALMERS

LO-MAINTENANCE MOTORS
TEXROPE DRIVES

The lightweight, cotton shirting above wore through after 100 cycles on a Taber Abrasion Tester.

The second swatch of the same shirting was finished with just 1% of a special Monsanto plastic... It survived 200 cycles!

The third swatch was finished with 2% of the same resin... It was still intact after 300 cycles!

In Monsanto textile laboratories equally startling increases in wear have been achieved on cotton lawns, spun rayons, tropical worsteds, denims and many other fabrics with a series of new textile finishes based on Monsanto's Lustron (polystyrene) plastics.

The concentrations of these tough resins required for such results are amazingly low. The special formulations being developed are well adapted to existing mill equipment and present mill practices. Thanks to close teamwork between the Monsanto plastics chemists and practical textile specialists working on the general problem of longer wear for tomorrow's fabrics, all the questions you will want to ask are being answered.

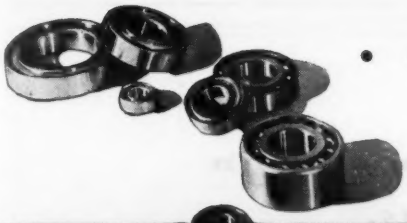
In short, the day is not far distant when you may be seeing department stores advertising sheets, work clothes or men's summer shirts finished with a Monsanto plastic to give them *twice or three times the wear of ordinary merchandise!*

If you would like to make sure that *your* fabrics will be among the first that can be so advertised . . . we will be glad to discuss the possibility of arranging trials of the new finishes in your mill. Simply write or wire: MONSANTO CHEMICAL COMPANY, Merrimac Division, Everett Station, Boston 49, Mass.

Divisions cooperating in Monsanto textile research in addition to Merrimac Division include: Central Research Laboratories at Dayton, Ohio; Organic Chemicals Division and Phosphate Division at St. Louis, Missouri; Plastics Division at Springfield, Massachusetts.

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING A INDUSTRY . . . WHICH SERVES MANKIND



. . . . They'll help keep the dirt out!

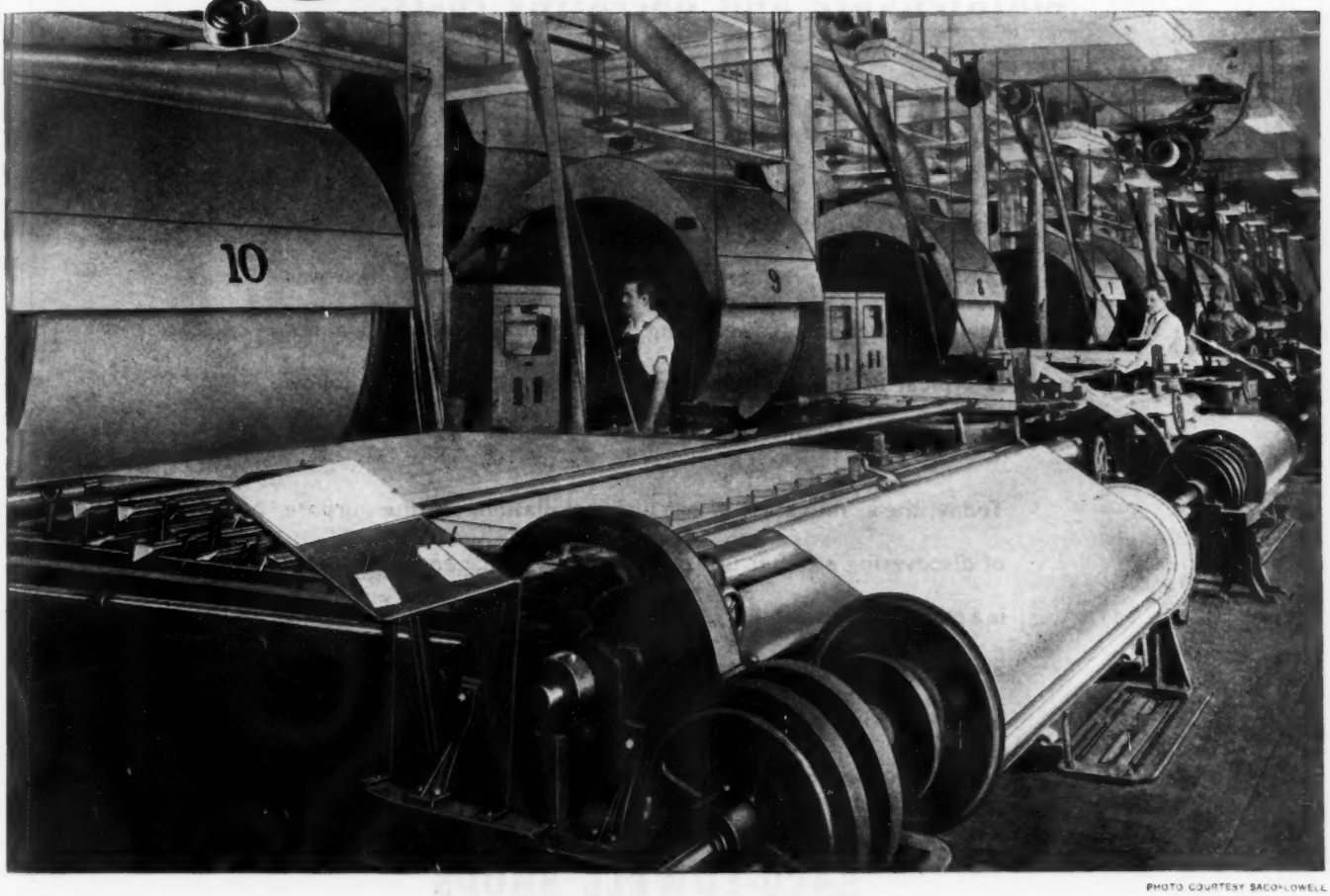


PHOTO COURTESY SACO-LOWELL

SAYS a textile plant manager: "We have several operations on which bearings must be used without soiling the product being processed. We use ball bearings on these installations as they have proved cleaner for this purpose from the standpoint of oil leakage and grease seepage."

You can reduce spoilage . . . also eliminate much of the fire hazard . . . by making use of modern anti-friction bearings. When you adopt these money savers, consult New Departure, world leader in the ball bearing field. New Departure precision and New Departure engineering service are your greatest assurance of ball-bearing satisfaction.

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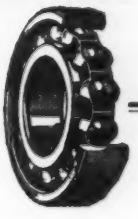


New Departure Ball Bearings help in many other ways

— *to save power*

— *to permit higher speeds*

— *to save on lubrication*

— *to reduce fire hazards*

— *to prolong machine life*

NEW DEPARTURE

BALL BEARINGS

Nothing Rolls Like a Ball

NEW DEPARTURE • DIVISION OF GENERAL MOTORS CORPORATION • BRISTOL, CONNECTICUT

Sales Branches: DETROIT, G. M. Bldg., *Trinity 2-4700* • CHICAGO, 230 N. Michigan Ave., *State 5454* • LOS ANGELES, 5035 Gifford Ave., *Kimball 7161*

. . . to attain the greatest economy in maintenance and operating costs.

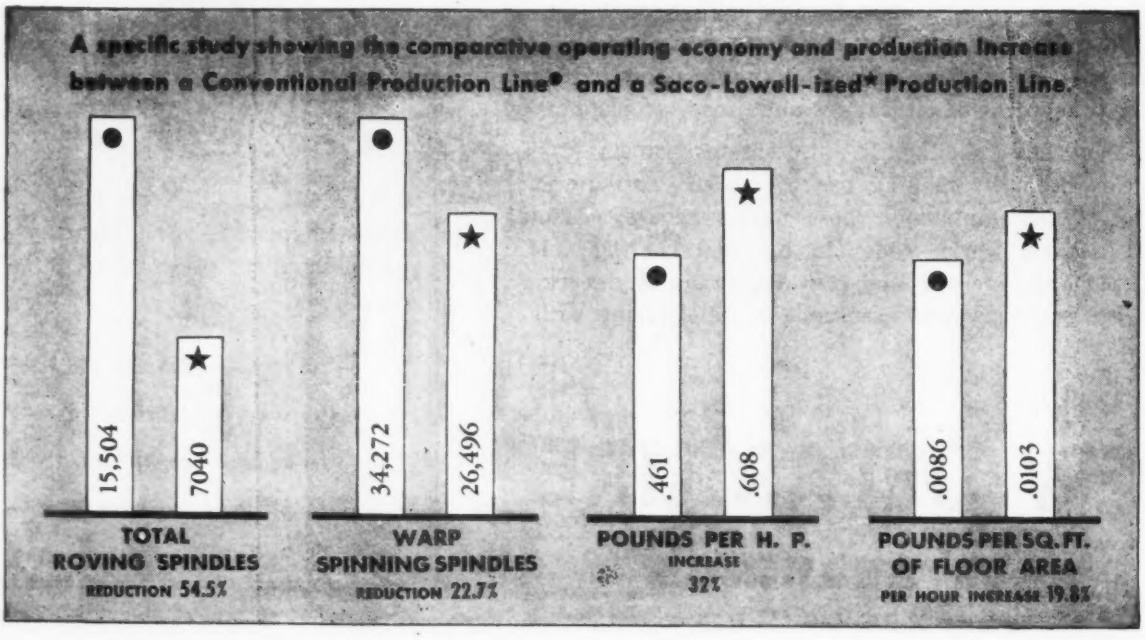
Saco-Lowell-ize

The chart below, based on a specific case, illustrates the improvement in production and operating economy which was achieved after Saco-Lowell-izing. This is not an unusual case, but is typical of the improved operating conditions which follow Saco-Lowell-ization.

Today, the examination of existing installations for the purpose of discovering a better utilization of floor space and equipment is a current responsibility of management. Many progressive mills are looking ahead right now and preparing plans for a Saco-Lowell-ization program, to be started immediately when war production is over.

SACO-LOWELL SHOPS

60 Batterymarch St., Boston, Mass. Charlotte Greenville Atlanta



COMPASS

on its record, today's best buy in transmission belting

The famous Goodyear Compass Cord transmission belt — now made with oil-resisting synthetic rubber — has an added margin of superiority over other belt constructions.

The Compass belt, for sixteen years, has been first choice on the toughest mill drives. Its patented, balanced cord carcass carries the load — and the cords are built to the same prewar quality standard. The rubberized fabric envelope protects the cords from wear, and here Goodyear uses the best oil-and-abrasion-resistant synthetic rubber.

You know what Compass has done — its records are legion in every industry. Today's synthetic rubber Compass belt benefits from Goodyear's twenty years' experience in improving synthetic rubber. The G. T. M. — Goodyear Technical Man — will be glad to recommend the proper Compass for your drives. Just write Goodyear, Akron 16, Ohio, or Los Angeles 54, California — or phone the nearest Goodyear Industrial Rubber Goods Distributor.

Compass—T. M. The Goodyear Tire & Rubber Company

GOODYEAR INDUSTRIAL RUBBER PRODUCTS
GTM-Specified
COMPASS CORD TRANSMISSION BELT
for oil well service
BALANCED BODY made of heavy rope-cord spiralled continuously without a splice. Cord on opposing sides of belt axis is twisted in opposite directions to neutralize torque of cord.
BALANCED COVER laid parallel to axis of belt — made of fabric in which alternate warp threads are twisted in opposite directions to prevent side-creep.
A PRODUCT OF GOODYEAR RESEARCH
GOODYEAR
THE GREATEST NAME IN RUBBER

★ BUY WAR BONDS—BUY FOR KEEPS ★

ARE YOU MOVING FORWARD WITH HIM ?

It's been mighty tough going every inch of the way for him . . . trudging over the burning sands of African deserts . . . sloughing through the steaming jungles of the South Pacific . . . crawling over the jagged rocks of Italy . . . and now, cutting a blood-paved path to Paris!

When he comes back, he will expect to find a better world waiting for him than the one he left to go out and fight for . . . and he has a right to expect it!

That's why it is our sacred obligation to plan for him and his future *now*. We must be ready to convert to peacetime production . . . ready to start building that better world . . . a world in which there will be a well-deserved place for *him*.

★BUY MORE THAN BEFORE . . . BONDS

TRADE-MARK REG. U.S. PAT. OFF.

MAGUIRE INDUSTRIES, INC.

ELECTRONICS division

No industry can afford to overlook Electronics when planning new production methods . . . for in Electronics will be found the key to the streamlining of many processes by automatic "magic eye" controls.

GREENWICH • STAMFORD • BRIDGEPORT • NEW MILFORD • NEW YORK

Show how TO KEEP LOOMS YOUNG

Like the psychological test given to inductees, this testing technique is applied to steel parts used in Army and Navy equipment, to locate stresses and measure their intensity. It's quite simple . . . simply brush flexible lacquer over the surface of the part to be tested, subject the stress-coated part to its normal operating load, then watch for a pattern of knife-edge wrinkles. Wherever they appear . . . there's the stress. And the density of their pattern indicates the *intensity* and direction of the stress. On the basis of these "lines of evidence", it is possible to make standard parts with the special strength needed to stand up under non-standard operating conditions.

This is one of many modern testing techniques regularly applied in C&K laboratories. And these same laboratories are one of your chief reliances for loom parts that will keep your weave-room overhead *down* to the lowest level . . . because C&K parts are not simply made to a pattern. They are made so they are metallurgically *right, in relation to other parts on the loom.*

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . .
and their New Uses in Tomorrow's Looms

HOW STEEL *STRETCHES* THE SYLVANIA LINE OF "COMPLETE PACKAGES OF LIGHT"

Government release of steel for fluorescent fixture fabrication enables Sylvania to round out its line of "complete packages of light" to fit all industrial and commercial general lighting requirements.

Now there are SEVEN INDUSTRIAL UNITS

Continuous-Row Type

Back into the line come these outstanding Sylvania Fixtures with steel reflectors, designed primarily for continuous-row or end-to-end installations. They are made with the same high quality materials available in 1942.

Single (4-foot) channel top-housing

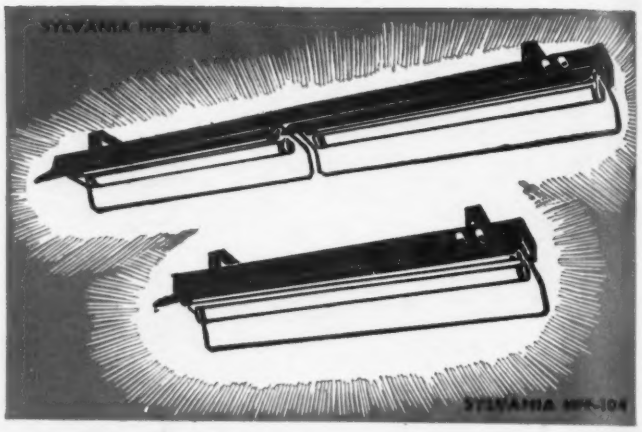
HFF-104—two 40-watt lamps, for continuous-row mounting
HFF-154—three 40-watt lamps, for continuous-row mounting

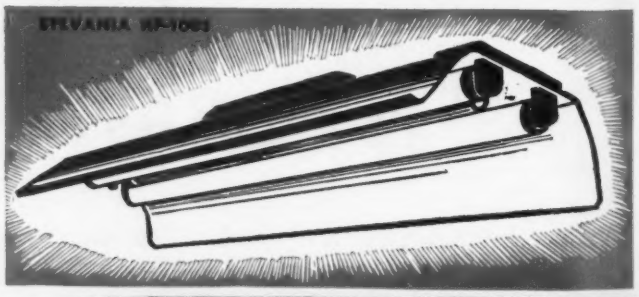
Double (8-foot) channel top-housing

(Continuous wire-way enclosure reduces cost of continuous-row installations)

HFF-208—four 40-watt lamps, for continuous-row mounting
HFF-308—six 40-watt lamps, for continuous-row mounting

All models come completely equipped with lamps, ballasts, and starters — pretested and ready for immediate installation.





All-Purpose Type

The famous Sylvania "Fixture of the Future," which has proven so popular in war industry, is now available with a reflector drawn from 20-gauge steel, with a reinforcing lip. Finished with durable synthetic enamel. For either continuous-row or individual mounting.

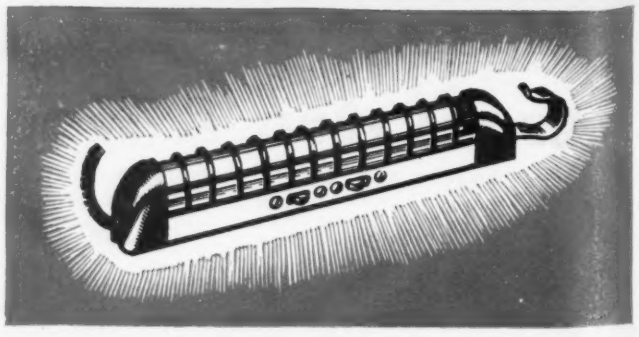
HF-100S steel reflector has knockouts that provide for easy conversion from two to three lamps. The streamlined top-housing in all models has knockouts that make almost any type of mounting possible. Supplied in "complete packages of light" with lamps, starters, and ballasts, pretested, wired, and ready for immediate installation.

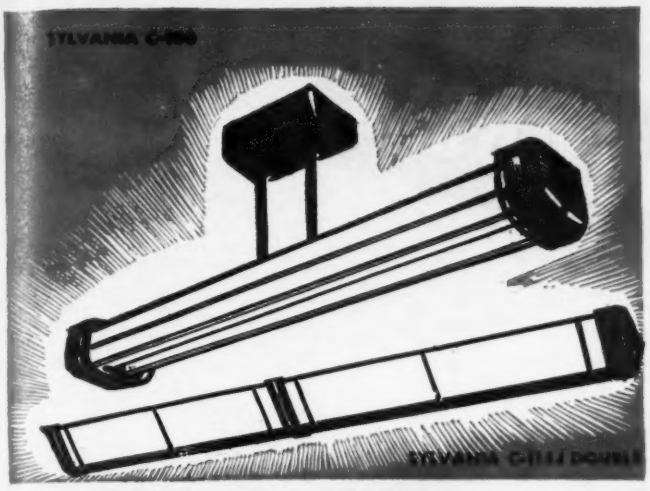
HF-100S—two 40-watt lamps
HF-150S—three 40-watt lamps
HF-235S—two 100-watt lamps

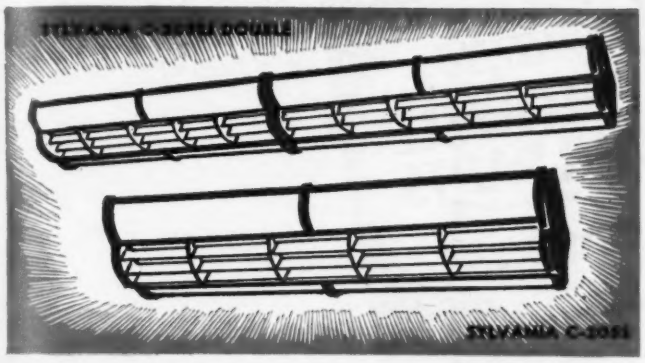
SYLVANIA
ELECTRIC PRODUCTS INC.
Salem, Massachusetts
Fluorescent Lamps, Fixtures and Accessories, Incandescent Lamps
Radio Tubes, Cathode Ray Tubes, Electronic Devices

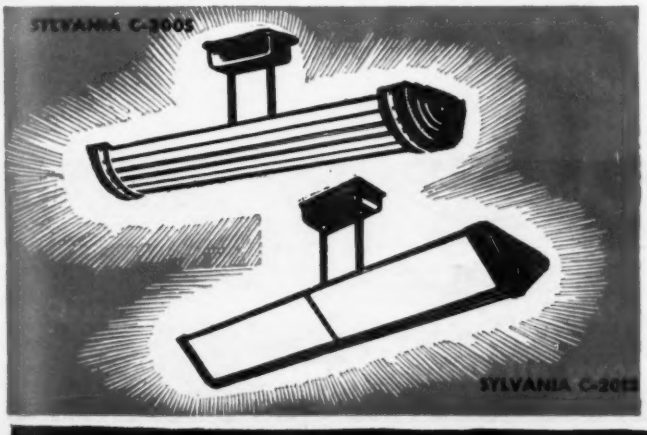
Portable FLUORESCENT WORK LIGHT FOR INDUSTRY

P-7 Sylvania Extension Cord Lamp makes fluorescent light portable for the first time. Compact dimensions — 10¼" x 1 3/16" x 1⅞". Goes anywhere the hand can reach in close-quarter work. Cool and adequate light from a 6-watt Sylvania Fluorescent Lamp is safe and efficient. Steel guard prevents lamp breakage. Handy hook leaves both hands free to work. Operates on 110-125 volts, 60-cycle, AC only.









Now there are SEVEN COMMERCIAL UNITS

Two-Lamp Shielded and Unshielded

It is now possible to resume the manufacture of this handsome and adaptable series. All models have steel reflectors and employ 40-watt lamps. This variety of models will make for wider fluorescent application to the commercial and institutional field.

Two 40-watt Lamps

C-100 unshielded with pendant
C-101 shielded with pendant
C-113 unshielded surface-mounted
C-115 shielded surface-mounted

All models are supplied with Sylvania Lamps as "complete packages of light."

Louver Type

These highly efficient fixtures are decorative in appearance but functional in design, with diffusing panels on each side of the lamps and louvers directly beneath. Equipped with four 40-watt lamps. Steel reflectors.

Four 40-watt Lamps

C-205S individual surface-mounted

Four-Lamp Shielded and Unshielded

These Sylvania Fixtures, which are ideal for stores, offices, laboratories and hospitals, now are equipped with 20-gauge steel reflectors finished with synthetic enamel. New design hinged end-caps and hinged diffusing panels make for easier and speedier maintenance. Supplied complete with four 40-watt Sylvania Fluorescent Lamps, Dua-Lamp Auxiliaries, and Starters — pretested and ready for immediate installation. Available with or without pendant.

Four 40-watt Lamps

C-200S unshielded, surface-mounted, individual
C-201S shielded, surface-mounted, individual

Leading Manufacturer of Fixtures in the Fluorescent Field

IF YOU HAVE A PROBLEM TO WHICH FLUORESCENT MIGHT BE APPLIED, WHY NOT CONSULT SYLVANIA ENGINEERS?

SYLVANIA "COMPLETE PACKAGES OF LIGHT"

Industrial Fixtures		*Commercial Fixtures*	
HFF-104	( )	C-100	( )
HFF-154	( )	C-101	( )
HFF-208	( )	C-113	( )
HFF-308	( )	C-115	( )
HF-100S	( )	C-205S	( )
HF-150S	( )	C-200S	( )
HF-235S	( )	C-201S	( )
P-7	( )		

SYLVANIA ELECTRIC PRODUCTS INC., Boston Street, Salem, Mass.
Dept. T.W. 844

Please send me information on the fixtures I have checked.

Name_____

Title_____

Firm_____

Address_____

City_____ State_____

. . . they are

Seals of Quality . . . Pledges of Value . . . Buyers' Guides . . .* and above all *Good Names!

You who have Saco-Lowell equipment in your mills know that this is true of the Saco-Lowell label, so when it comes to the repair parts you use, you should insist on the security that this label implies and guarantees. Every genuine Saco-Lowell repair part is an exact duplicate as to material and dimension of the part it replaces . . . thus preserving the mechanical integrity of your original equipment and giving you the same efficiency and fine performance that you expect of all machinery bearing the name Saco-Lowell.

Saco-Lowell Shops

60 BATTERYMARCH STREET, BOSTON, MASSACHUSETTS ***Charlotte Greenville Atlanta***

SANDOZ PRESENTS *the color achievement of the month*

Saddle Beige BY AMERICAN WOOLEN COMPANY

For *chic* in town or country, Sandoz presents another color hit of the season . . . smart saddle beige, created for Rosenblum by American Woolen Co.

Cooperating with many a leader in textiles, Sandoz research has developed many a dye which now adds lustre to admired fashions throughout the Americas.

For the feminine wardrobe, Sandoz offers a full range of Acid colors . . . level dyeing, well suited for piece dyeing, and extremely fast to light and wear. These include such colors as Xylene Light Yellow 2 GP (Pat.) . . . the patented Alizarine Light Blue 4 GL and Violet 2 RC or Azo Rubinole 3 GP (Pat.), all exclusive Sandoz developments.

For men's wear, a distinguished group of Sandoz milling colors is at your service . . . fast to wet processing, applicable to wool raw stock, worsted tops and yarn dyeing in package machines. Among them are the patented Brilliant Alizarine Milling Blues BL, G and SL, uniquely fast to light *and* fulling.

Also, for men's wear, investigate Sandoz Metomega Chrome Colors in a complete metachrome range. Their ease of application has saved as much as 50% in boiling time.

Sandoz application laboratories are maintained in New York, Boston, Charlotte, Los Angeles and Toronto; stocks are carried in those cities. Other Sandoz branches: in Chicago, Paterson, and Providence.

Another "achievement of the month" from Sandoz' color hit parade —next month. Watch for it.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDOZ *thinks ahead with textiles*

SANDOZ

TUBES FOR DYEING OR TWISTING ON...

The Rotary Traverse Winder

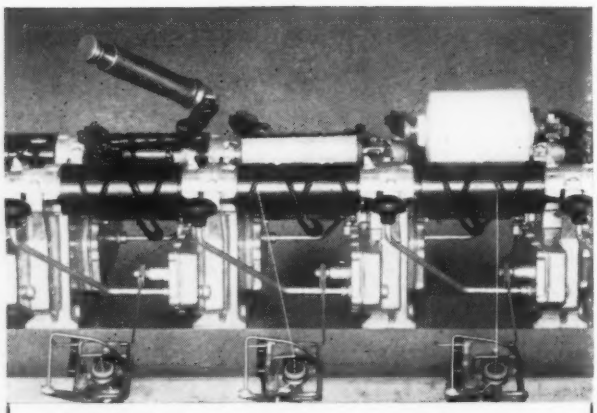
The Roto-Coner*, the winder with the exclusive Rotary Traverse, may be equipped for the production of dye tubes or twister tubes, as well as for knitting or warping packages. There are four types of traverses, and each one is standard for its respective type of work.

Either a two-turn or three-turn traverse, with uniform spacing of groove crossings, is used for tubing. Winding speed is limited only by the way the yarn comes off the supply package; in all cases, maximum speed may be obtained, regardless of yarn size.

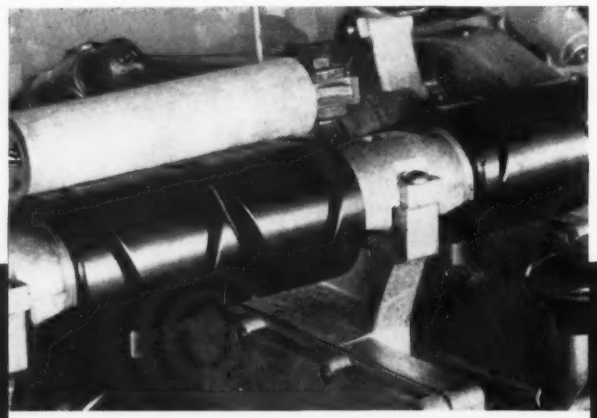
Almost any type of dye tube can be accommodated. Yarn to be twisted is wound onto tubes which rotate on the bare winding spindle; these tubes will fit the twister creel without alteration of the creel spindle.

Universal Winding Company

PROVIDENCE BOSTON UTICA PHILADELPHIA
CHARLOTTE ATLANTA



Dye packages wound on the Roto-Coner* are free from hard ends. The groove in the Rotary Traverse reverses the yarn quickly at each end of the package; there is no dwell, no tendency for the yarn to roll inward at the base end. As a result, dye penetration is even throughout the package.



Twister tubes are wound on the Roto-Coner* at 550 yards per minute — with every inch of yarn carefully inspected by efficient Precision Cleaners which are easily set with perfect uniformity from spindle to spindle. Higher twisting speeds are thus made possible — in some cases as much as 25% higher.

ROTO-CONER* LEESONA

*Reg. U. S. Pat. Off.

The Rotary Traverse Winder

WOOD CONES • PAPER CONES • PARALLEL TUBES

NO SLICKING UP

. . . because Armstrong's Cork retains its grip for the full life of the Cot

YOU can be sure of uniform drafting and stronger yarn when you use Armstrong's Cork Cots. And you won't be troubled with "eyebrowing," because these cots produce only a small amount of clearer waste—and place this waste well back on the clearer boards where it belongs. The reason behind these outstanding advantages of Armstrong's Cork Cots is their exceptionally good grip, which lasts for the full life of each cot!

This superior grip is a result of cork's unique cellular structure. One cubic inch of cork is composed of more than two hundred million air-filled cells! When cork is buffed, the cells on the surface are ruptured, forming tiny suction cups. As these are worn down during operation, new cells are continually being exposed. Thus Armstrong's Cork Cots retain their high coefficient of friction—never "slick up."

In addition to lasting good grip, cork's air-filled cells give Armstrong's Cork Cots remarkable resistance to "creasing" by hard ends. When a hard end runs through the rolls, the air in the cells compresses. As the pressure is released, the cells expand quickly toward normal size.

Armstrong's Cork Cots are nonflowing—give you a true drafting surface. They have a long initial service life, and rebuffing gives them three or four extra full-length lives. Each rebuffing costs as little as ½¢ per roll.

For the full story of how Armstrong's Cork Cots can help you get better running work and more poundage, see your Armstrong representative. He'll be glad to give you samples and prices. Or, write Armstrong Cork Company, Textile Products Section, 8308 Arch Street, Lancaster, Penna.

BETTER RUNNING WORK

— MORE POUNDAGE

ARMSTRONG'S CORK COTS

ACCOTEX COTS* • ACCOTEX APRONS*

The Key to Simplified Buying OF FLOOR TREATMENTS AND MAINTENANCE PRODUCTS

A Single, Dependable Source of Supply

A single source of supply for related floor-maintenance products affords convenience and is far-reaching as a time-saving expedient. But many *plus* advantages are offered by *Finnell*, resulting in co-ordinated economy for the user. For example, all *Finnell* Sealers, Waxes, and Liquid Cleansers are processed in *Finnell's* own laboratories . . . all *Finnell* Cleaning Powders are compounded in *Finnell's* own mill . . . all *Finnell* Equipment and Accessories are produced in *Finnell's* own plant. Thus, consistently dependable quality is assured throughout the line.

Furthermore, all *Finnell* supplies—Cleansers, et cetera—are available in quantities that best serve the individual needs of all users, from the smallest to the largest. *Finola Scouring Powder*, for instance, is sold in cases of forty-eight 1¼-lb. sprinkle-top containers, in cases of twelve 5-lb. bags, and in 75-lb. drums, half-barrels, and 300-lb. barrels. For consultation or literature on any *Finnell* product, phone or write nearest *Finnell* branch or Finnell System, Inc., 1908 East St., Elkhart, Ind.

★

Need Scrubbing Equipment?

Ask for a *Finnell Preferred Listing* and be among the first to receive a new *Finnell* when war-time restrictions are lifted. No obligation to buy . . . your established 'priority' may be used or not used, as you choose.

THE COMPLETE *Finnell* LINE

- Finola Scouring Powder
- Century Scouring Powder
- Solarbrite Scrub Soap
- Solar Soap Powder
- Sanax Wax Cleaner
- Finnell Rubber Cleaner
- Asesco Solvent Cleanser
- Setol All-Purpose Cleanser
- Rug Shampoo
- Crystal Cleanser For Dishwashing
- Han-San Liquid Hand Soap
- Han-Kleen Hand Soap Heavy Duty
- Killum, An Insecticide
- Fino-Sorb Oil and Grease Absorbent
- Finnell Terrazzo-Fil
- Finnell Fulfil Oil Filler, Sealer
- Gloss Seal, Surface Type (Gym Seal)
- Gloss Seal, Penetrating Type
- Traffic Seal
- Fino-Gloss Liquid Wax Several Types
- Finnell-Kote A Solid Wax
- Finnell Liquid Kote
- Finnell Liquid Wax
- Finnell Cream Kote (Paste Wax)
- Floor-Maintenance Equipment and Accessories

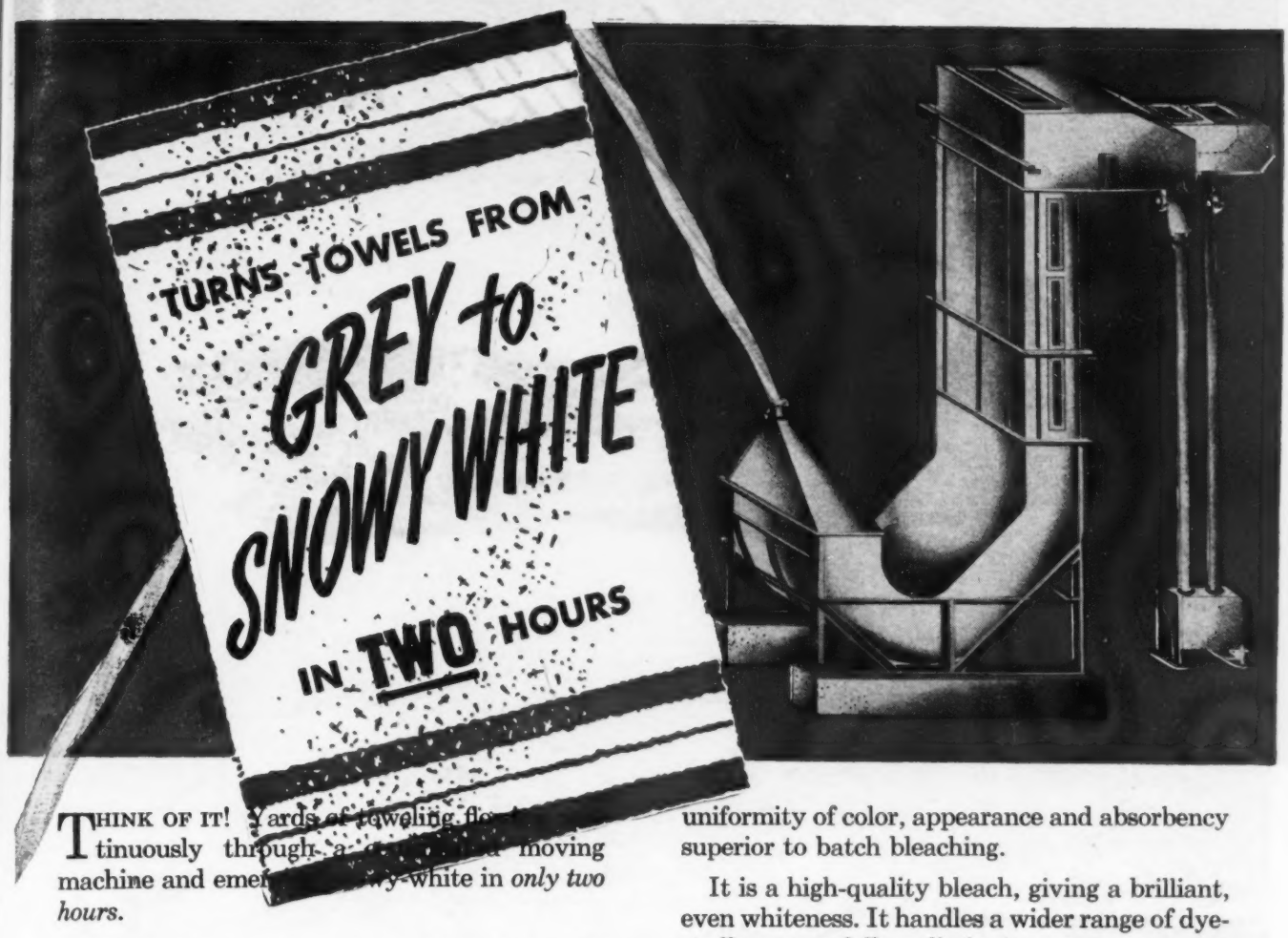
FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

DUPONT *CONTINUOUS* PEROXIDE BLEACH



THINK OF IT! Yards of toweling flow continuously through a [illegible] moving machine and emerge snowy-white in *only two hours.*

This is a far cry from batch bleaching, with its time-lag of from eight to fourteen hours. Now, continuous bleaching becomes an integral part of the production line.

This process is the result of intensive research and development by Du Pont engineers. Successful operation at a number of leading mills has now proved it practical.

Besides saving time, Du Pont Continuous Peroxide Bleach saves in other ways . . . on steam, water, chemicals. The savings justify the investment required.

When changing from one fabric to another, only a simple adjustment is necessary. As material goes through the process, each yard is treated alike from start to finish. The result is a uniformity of color, appearance and absorbency superior to batch bleaching.

It is a high-quality bleach, giving a brilliant, even whiteness. It handles a wider range of dyestuffs successfully, eliminates many common imperfections, and reduces seconds and rejects to a minimum. The reason for this is the fact that all operations are easily controlled.

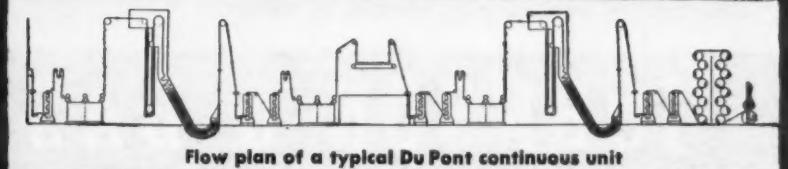
The necessary equipment—designed and patented by Du Pont—is built by recognized manufacturers of textile finishing machinery. For information on the use of peroxides in continuous bleaching, write E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington, Delaware.

✓ THESE FEATURES

TWO-HOUR BLEACH — **HIGH QUALITY**
ECONOMICAL — **UNIFORM BLEACH**
FLEXIBLE — **CONTROLLED**
MINIMUM SECONDS AND REJECTS

DU PONT

DU PONT PEROXIDES



Flow plan of a typical Du Pont continuous unit

Modern

The principle of air travel remains basically the same as when the Wright Brothers launched their initial effort at Kittyhawk 40 years ago. Yet constant modernization has so improved performance that comparison between Wright's original model and today's streamlined giant Clippers of the sky is impossible.

Operating on a tried and proved spinning principle, the oldest in use today, the present J. & B. Wool Mule is as modern in the textile field as the Pan-American Clipper, built by Boeing, is in the field of aeronautics. Utilizing ball bearings, heat treated individually mounted anti-vibration spindles, a unique, exclusive cam shaft, specially selected metals and a host of other improvements, it runs at high speeds and produces yarn with not over 5% variation in size per yard on bobbins containing up to ¾ lbs. of yarn.

The gains effected by modern J. & B. Mules compare more than favorably with those produced by any other type of wool spinning machine as follows:

GIANT PACKAGE MULE FOR WARP—

By reducing number of doffs, cuts spooling time about 54½%. Reduces burling time because of less knots. About 33⅓% increase in spinning production per spindle; 33⅓% saving in floor space.

SMALL PACKAGE MULE FOR FILLING.

Up to 20% more efficient than old-style mules. These mules are built to accommodate 8", 8¾", 9", 9½", 10¼" or 10½" bobbins of any gauge from 2" to 3⅛". Each mule, however, *only* accommodates 1 size bobbin.

OTHER ADVANTAGES:

J. & B. Mules reduce carding costs about 15%, as compared with other spinning methods because they can handle a coarser roving. Make a better yarn than other types of spinning; stronger, more even, more elastic, more lofty and truer diameter.

Tell us your wool spinning problems and let us make recommendations

JOHNSON & BASSETT, INC.

ESTABLISHED IN 1870

AMERICA SHIPS

THE LATEST J&B MULE

These case histories tell why it pays to modernize with the J. & B. Mule.

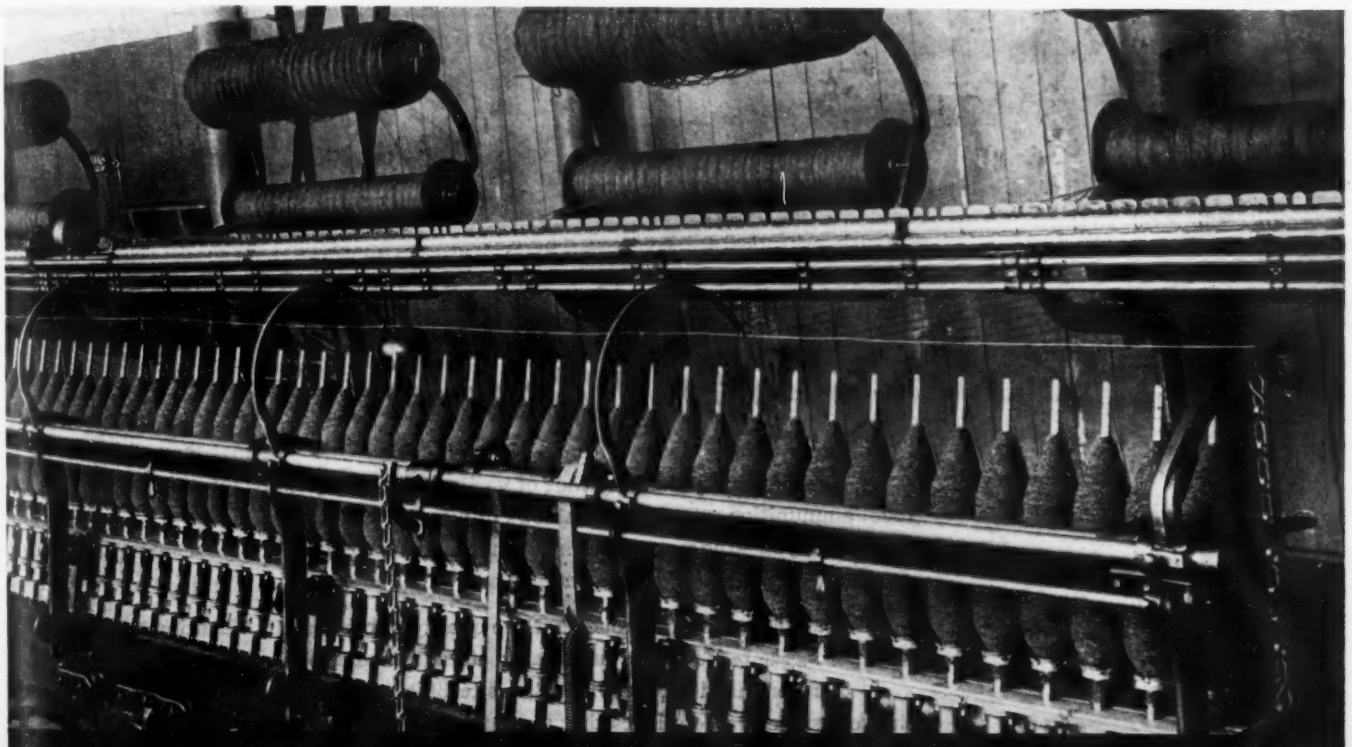
CASE HISTORY 1. One of the largest spinners of woolen sale yarns originally installed 3 Giant Package Mules on trial. Now this mill has a total of 16 of these mules, representing 4224 spindles.

CASE HISTORY 2. A leading manufacturer of men's and women's wear installed a total of 7,056 Giant Package spindles after satisfactory experience with a few sample Mules in competition with ring spinning.

CASE HISTORY 3. Still another mill writes: We are very pleased to state that after 6 weeks of operation, our Giant Package Johnson & Bassett mule is performing even better than we expected. Some of the advantages of large package mule spinning are obvious. Spooling is speeded up and spooling costs are reduced. The number of knots on a spool is cut in half which results in improved cloth and a saving in burling time. We expected these improvements but we did not expect to show any savings in the spinning department. We were afraid that our work might not run as well on the large package bobbin as on the regular 8¾" bobbin. We believe now that our work averages to run better on the Giant Package Mule than on our regular mules. The fact that we used a 13½" bobbin, 2¼" gauge on the Giant Package Mule allows us to put more than twice as much yarn on a bobbin as we average from our other mules. This cuts the doffing time, and as we are running this machine as fast as any, we are showing a very satisfactory increase in production over our other machines. With a 2¼" gauge on this machine, we are able to use the same spool as we use on the other mules.

CASE HISTORY 4. One of our customers discarded 14 400-spindle mules — a total of 5600 spindles, and installed in their place only 11 — 288 spindle 3" gauge Giant Package Mules, which turn out approximately the same amount of work.

CASE HISTORY 5. Still another customer replaced 2 120-spindle ring spinning frames and 4 360-spindle mules (a total of 1680 spindles) with 4 360-spindle 2½" gauge Giant Package Mules (1440 spindles), and had to add one set of cards to supply the new mules with enough roving.



Worcester, Massachusetts, U. S. A.

G.I. NOW... but just wait

The Invasion is on!

Out of the sky float myriads of vari-colored supply parachutes, dropping food, ammunition, guns, all the sinews of war. And those parachutes are made of rayon—the very same rayon that might have gone into your linings and undies, dresses and gowns.

We at Industrial are proud that the quality of our famous "Continuous Process" *Spun-lo Yarn—its uniformity, strength and knot-free characteristics—recommended it to Uncle Sam's technicians for such vital tasks. They're the very same characteristics that recommend it so highly for the products of peace. When peace comes, *Spun-lo will be mustered out, and then, lovely fabrics for you—some familiar, some as yet, unborn!

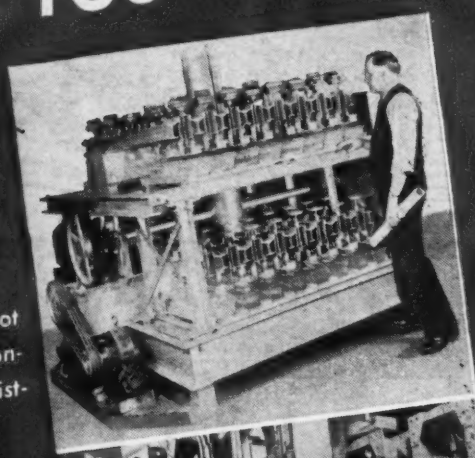
*Reg. U. S. Pat. Off.

Industrial RAYON CORPORATION
MAKERS OF Spun-lo RAYON YARN BY THE Continuous Process

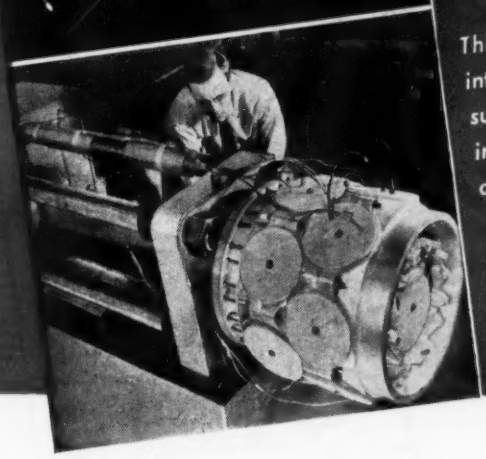
CLEVELAND, OHIO • NEW YORK OFFICE: 500 FIFTH AVENUE

Alcoa Research
MEANS THIS TO YOU

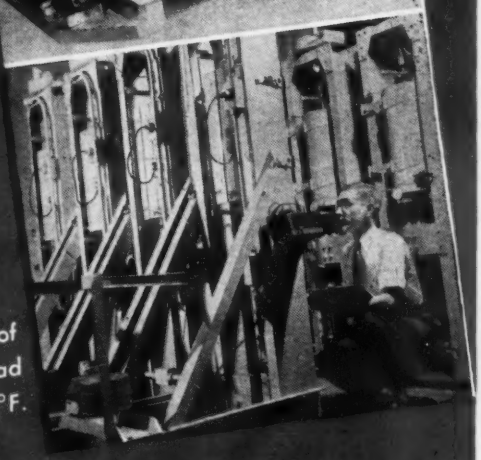
Alcoa Research pioneered the development of spectographic analysis methods for the control of alloy uniformity.



Strength and lightness are not enough; Alcoa alloys are constantly tested for their resistance to corrosion.



This machine crowds a lifetime into a couple of days, testing such parts as pistons, connecting rods, cylinder heads, crankcases for aircraft engines.



Determining the behavior of aluminum products under load when heated up to 600°F.

Research carried on by the staff of Aluminum Company of America has won world recognition. Its effect is fundamental and far-reaching.

For example, the manufacturer who buys Alcoa Aluminum products, to include in the devices or equipment he is making, buys more than aluminum castings, forgings, sheet or shapes. Alcoa research helps him determine what alloys will best enable him to meet such requirements as weight saving, corrosion resistance, strength and heat transfer.

In addition to the careful research done on alloys, Alcoa service goes further. The designs of parts to be made in Alcoa Aluminum are checked for the best method of manufacture, most efficient use of aluminum, and highest possible service characteristics. Parts are produced under close laboratory control, by a manufacturing and research organization whose guiding principle is the constant improvement of Alcoa's output. The performance of each product, as it ultimately affects you, is thereby improved.

These services are hastening the winning of the war by aiding manufacturers of wartime products. They will have an important effect, too, on designers, builders and users of peacetime products. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALCOA ALUMINUM REG. U. S. PAT. OFF. **ALUMINUM**

Crane permits compact loom arrangement.

Carries laps from pickers to cards.

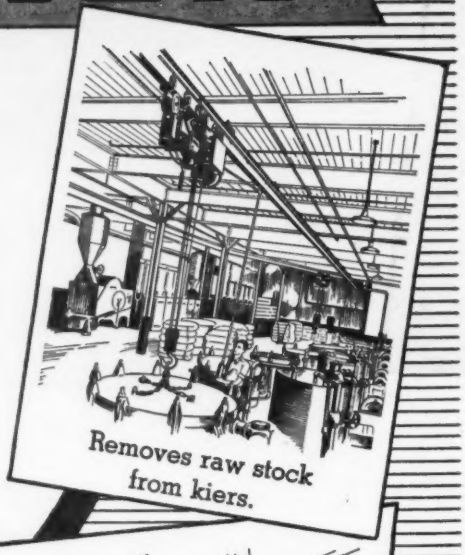
Ideas FOR POST-WAR PRODUCTION

Here are several American MonoRail installations which have proven successful in low cost handling. Any plans for postwar production should include such handling methods.

Regardless of the size or type of application, American MonoRail Engineers can help. Their specialized experience often uncovers hidden possibilities for simple systems that bring immediate returns. Consultation with these men is available without obligation. Write for copy of Bulletin C-1 showing a wide range of installations.

THE AMERICAN MONORAIL CO.

13108 ATHENS AVENUE • CLEVELAND 7, OHIO

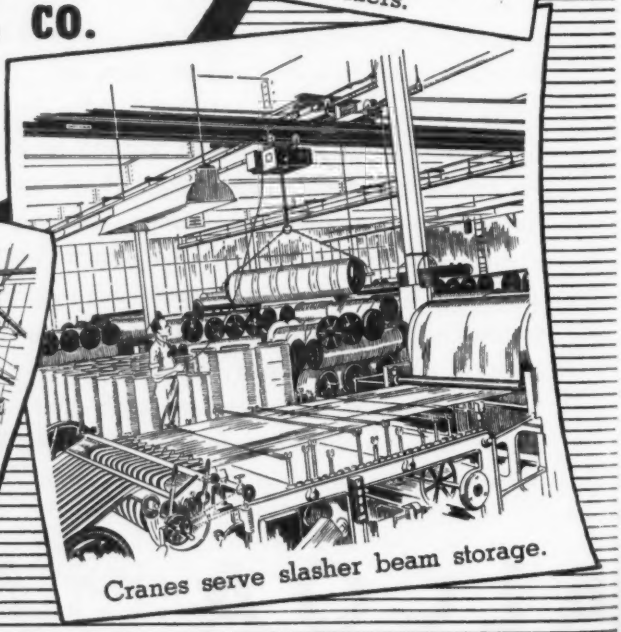


Removes raw stock from kiers.

SEND FOR BULLETIN C-1

A 56-page book showing successful applications of American Mono-Rail Systems.

Spurs from Crane serve inspection.



Cranes serve slasher beam storage.

POLYETHYLENE

—A Carbide Production Achievement for the Navy

Important New Plastic Has Many Unusual Properties

A little over two years ago, the U. S. Navy learned that the Carbide and Carbon Chemicals Corporation in collaboration with an associate company, The Linde Air Products Company, had developed a high pressure synthesis of a new material, Polyethylene, and it was found that this material was exactly suited to meet the Navy's requirements of an insulation for coaxial cable used in radar equipment.

At the Navy's request, these two companies, working together but entirely independent of anyone else, designed in their own Engineering Department, and built with their own Construction Organization a plant to produce polyethylene by a process different from any other commercial polyethylene process.

Within thirteen months from the date the project was authorized, this plant was producing at 180 per cent of rated capacity.

At the conclusion of the first full year of production the Navy Department told the plant:

"One year ago your plant commenced the production of polyethylene, a component of radio cable essential to the efficiency of electronic communications units and, therefore, vital to the success of naval operations. Production for the year has equalled 240 per cent of the rated output for the facilities. Everyone engaged in developing the product, planning, engineering, and managing the plant, and each of you engaged in producing polyethylene may be justly proud of a valuable contribution to the war effort."

Today, approximately two years after Carbide was given the assignment, this plant is producing polyethylene at 600 per cent of rated capacity and is providing the Navy's requirements of this material for use in coaxial cable.

(This advertisement has been reviewed and approved by the U. S. Navy Department)

Plastics Division

CARBIDE AND CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

UCC

30 EAST 42nd STREET, NEW YORK 17, N.Y.

POLYETHYLENE

—A Carbide Production Achievement for the Navy

The Important New Plastic!

Polyethylene resins have the most favorable electrical characteristics of any plastic material for use in this electronic application. In addition, this new plastic material has many other exceptional characteristics, which suggest widespread application in many different fields. Polyethylene plastics are tough and impact-resistant. They are inherently flexible and extensible. They have an extremely low water vapor transmission coefficient and will absorb an unusually low percentage of water. Their chemical resistance is outstanding. Polyethylene is one of the lightest plastics, so light that it will float in water. It maintains its valuable properties over a wide range of temperature. It remains usable at temperatures lower than 90 degrees below zero, Fahrenheit, and is sufficiently rigid for use in temperatures up to 230 deg. F.

Polyethylene is colorless and translucent as originally manufactured but it can be formulated to produce colored products of exceptionally high lustre. These products can be fabricated by standard processes on existing plastics equipment.

Molded and extruded products, cloth coatings, flexible sheeting and film, and monofilaments are among the polyethylene plastic products which will be available in the future.

Polyethylene plastics are now restricted to applications covered by WPB Limitation Order No. 348. Technical data and samples for controlled end uses can be obtained by manufacturers with plastic-processing equipment by writing Plastics Division, Carbide and Carbon Chemicals Corporation.

(This advertisement has been reviewed and approved by the U. S. Navy Department)

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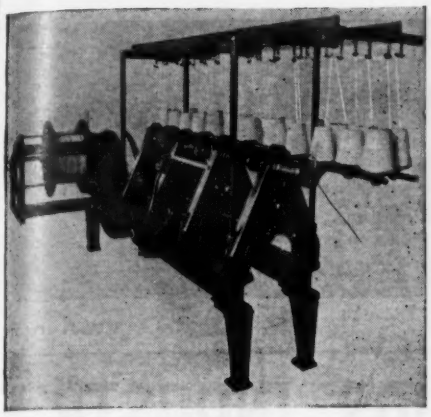
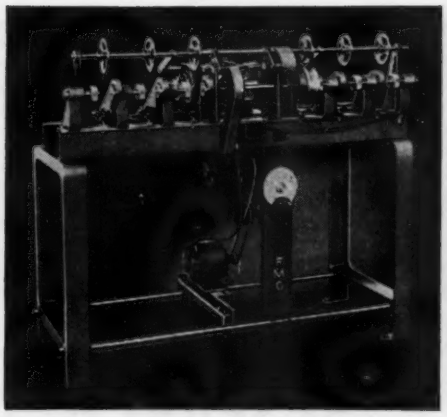
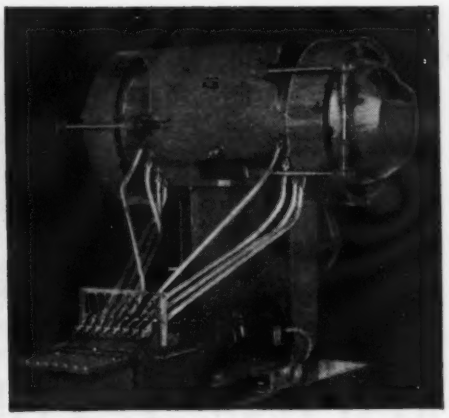
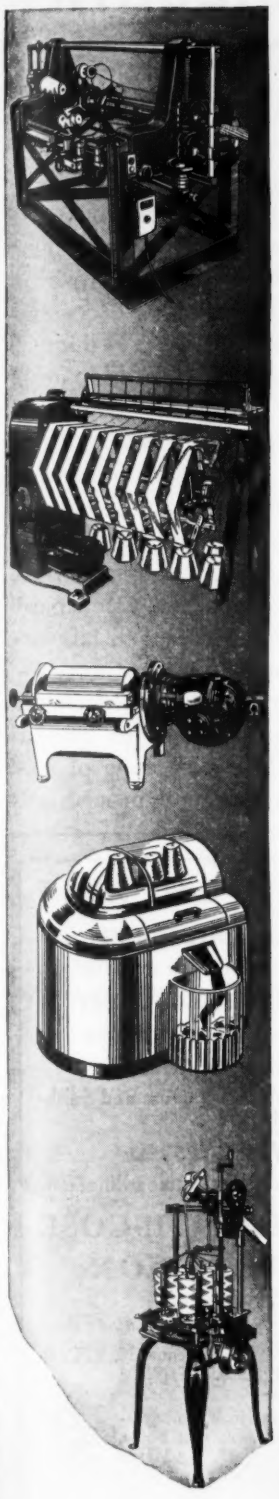








FIDELITY Machines may make yours a Post-War Period . . .

Saturated with Opportunity

IT'S largely a matter of being ready *before* the day of transition—of looking into the matter *now* to see which of FIDELITY'S present machines will clip minutes, multiply manpower, cut horsepower or otherwise reduce manufacturing costs for you.—Or of seeing if FIDELITY can use its technical imagination, interpretive engineering and unusual facilities to develop or adapt a machine to your special needs.

Start preparing now by sending for a 48-page book illustrating and describing a few of the more than one thousand special-purpose machines wholly or partly designed or redesigned and built by FIDELITY during the past third of a century.

BONDS—*Buy them now to Bring the Boys down the Home Stretch*

Intricate, Automatic Precision Machines

FIDELITY MACHINE COMPANY

3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. AUGUST, 1944

VISCOSE TEXTILE RESEARCH AIDS INDUSTRY

Research Opens New Outlets for Rayon Yarns

MANY OF THE PRINCIPAL steps in converting research products to commercial use are taking place in the Textile Research Department of the American Viscose Corporation, located at Marcus Hook, Pennsylvania.

The functions of this department are numerous. It serves as a practical research laboratory for all textile mill applications and as a headquarters for men working in these applications. Moreover, it serves as a consultation service for customers who want advice on rayon applications.

In the Textile Research Department are machines of all types for the handling of rayon, from raw stock to finished yarn or fabric. This machinery occupies an area of over 100,000 square feet. Almost without exception, the machinery is of *full commercial size*. Thus the many variables encountered when using laboratory size equipment are eliminated. The nucleus of the Textile Research Department consists of seven divisions. Each represents a distinct branch of the textile field. They are the cotton, woolen, worsted, knitting, warping and slashing, weaving, and dyeing and finishing divisions.

The cotton division applies viscose or acetate rayon, or "Vinyon**", to the cotton system of spinning. The woolen and worsted divisions apply rayon to their spinning systems. A millman would find himself completely at home in the division representing his branch of the industry, although the handling of rayon on his type machines might be new to him.

There is an eighth division which handles the industrial use of viscose and acetate rayon and "Vinyon". Work in the industrial division deals with pump packings, insulation wrapping, upholstery filling, lamp mantles and other uses outside the ordinary textile fields.

In addition to the Textile Research Department, the corporation maintains extensive chemical, mechanical and engineering research laboratories. These laboratories are constantly at work on basic chemical research, improvements to present products and development of improved machinery and procedures.

ARMY ORDERS "VINYON" E.** BANDAGES

The Procurement Office of the U. S. Army Medical Department has ordered 16,000 dozen new-type elastic bandages made of "Vinyon" E, the elastic "Vinyon" yarn manufactured by the American Viscose Corporation. 12,000 dozen will be manufactured by Medical Fabrics, Inc., of Paterson, N. J., and 4,000 dozen by Arbeka Webbing Co., of Pawtucket, R. I.

One of the chief advantages of the "Vinyon" E bandages, according to medical men who have used them, is that they maintain even elastic pressure. Doctors have also reported that another advantage is the fact that the elastic "Vinyon" bandage does not require daily washing to renew its elasticity.

**T.M.—C. & C.C.C.

A. V. C. PROMOTES RAYON ABSORBENCY

In a current advertisement the American Viscose Corporation dramatizes the absorbency characteristic of spun rayon. Rayon diapers are used as an example of its absorbency effectiveness. This is one of a series of advertisements appearing in "Time" and other influential magazines, that stresses the versatility of rayon, the man-made fiber.

MAKE USE OF 4-PLY SERVICE

1 **PRODUCT RESEARCH**
Helps you get the right yarn or fiber.

2 **FABRIC DEVELOPMENT**
Helps you design new fabrics.

3 **TEXTILE RESEARCH**
Helps solve production and finishing problems.

4 **"CROWN" TESTED**
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

Producer of
CROWN* *Rayon Yarns and Staple Fibers*

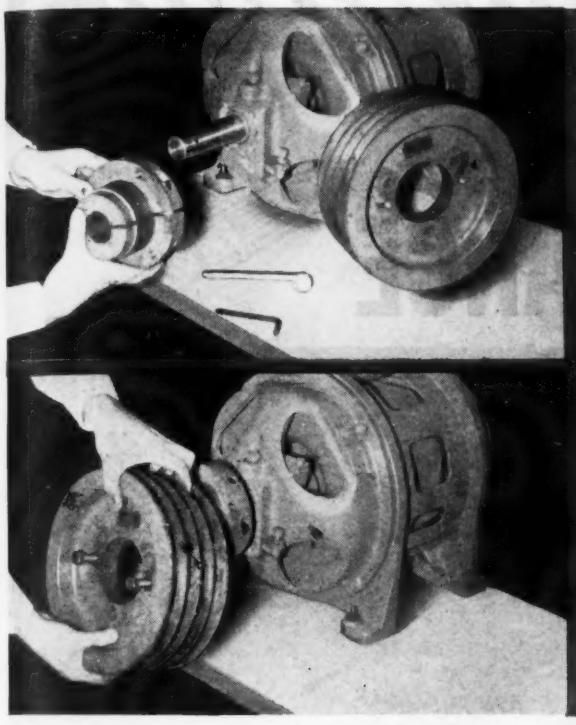
Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

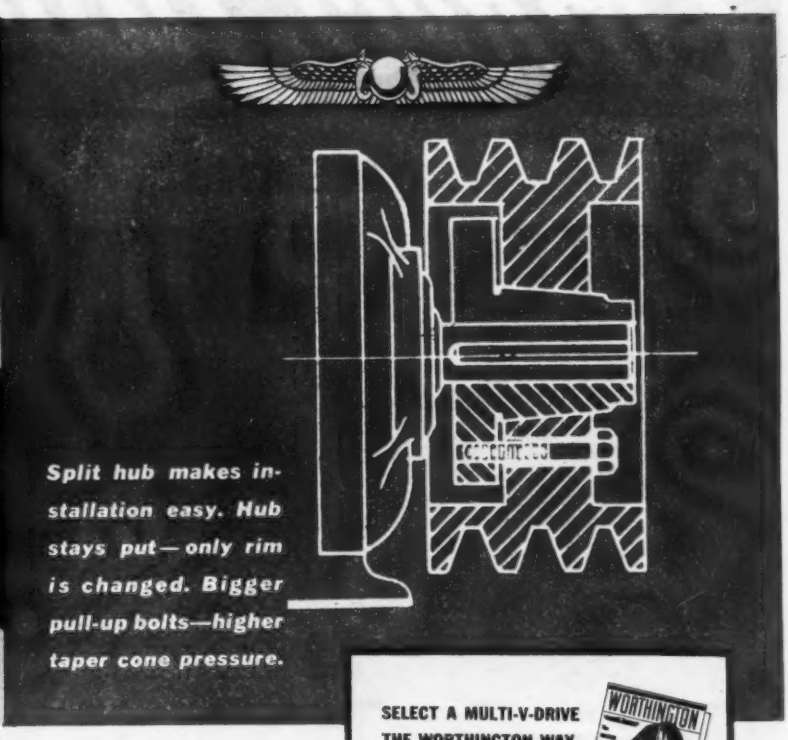
Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off.

NO OTHER SHEAVE HAS THESE 3 ADVANTAGES





Split hub makes installation easy. Hub stays put—only rim is changed. Bigger pull-up bolts—higher taper cone pressure.

Worthington's QD Sheave is easy to get on, easy to get off, yet always tight on the shaft

If you have ever been in the shop when old-fashioned sheaves were being changed . . . saw workmen sledging and prying and sweating to get one off and another on . . . got an earful of loose fits, tight fits, misalignment, then you'll appreciate these advantages of Worthington's QD sheaves.

With the QD, the hub stays put, because a variety of sizes of rims fit it. When changes are made for different speeds, the rim is easily removed and replaced. On all other sheaves, the hub has to be loosened, presenting a realignment problem when the hub is drawn up to the rim. Once you put on the hub of the QD sheave, alignment problems are permanently solved.

These advantages, plus those of the Worthington-Goodyear Endless Cord V-Belts, make the Worthington Multi-V-Drive the most trouble-free method of driving by V-belts.

Stock size sheaves and belts are available at strategic centers throughout the country.

SELECT A MULTI-V-DRIVE THE WORTHINGTON WAY with this simplified, easy to handle Master Manual

You can select the right drive to fit your job exactly in three minutes by the watch—using just plain everyday arithmetic.

Scientifically evaluated, after years of laboratory tests, all factors affecting V-Belt life and V-Belt efficiency were taken into consideration so that each selection is guaranteed to give peak performance under all conditions for which it is recommended.

This 72 page indexed manual does your Multi-V-Drive engineering for you. Be sure to get your personal copy.

Mail in the coupon below now.

MV4-11

Centrifugal Pumps | Rotary Pumps | Steam & Power Pumps | Vertical & Horizontal Compressors | Liquid Meters | Variable Speed Drives | Multi-V-Drives

WORTHINGTON PUMP AND MACHINERY CORPORATION
Standard Products Div.
Harrison, N. J.

WORTH BEHIND THE NAME WORTHINGTON

Standard Products Division
Worthington Pump and Machinery Corporation
Harrison, N. J.

Please send me a copy of the Worthington Master Manual.

Name.....

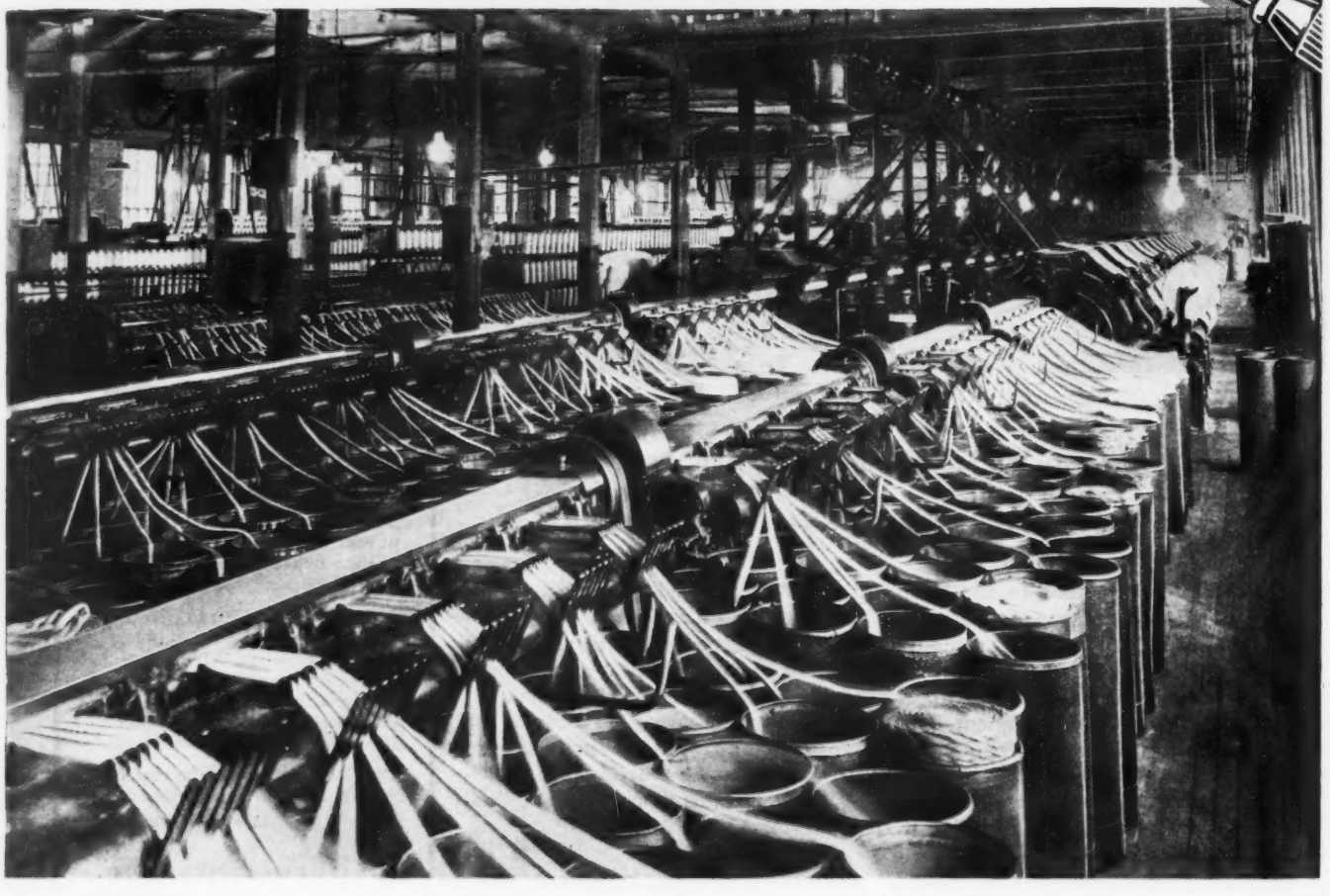
Company.....

Address.....

Correct Lubrication

MEANS

BETTER MAINTENANCE



• Very often, *correct* lubrication is the remedy for difficult maintenance due to excessive wear.

For *correct* lubrication of spindles, Sinclair provides *LILY WHITE OILS* that keep temperature down and reduce wear at all spindle speeds and package loads. *NO-DRIP LUBRICANTS* are highly efficient and throw-resistant on top rolls, comb boxes, and mechanical drives.

• • •

(Write for "The Service Factor"—published periodically and devoted to the solution of lubricating problems.)

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

Use DECERESOL* OT

THE MOST POWERFUL WETTING AGENT AVAILABLE

CUTS TIME AND COSTS IN MORE THAN THIRTY DIFFERENT WETTING, EMULSIFYING AND DISPERSING OPERATIONS

Making one month do the work of two is a feat that has been accomplished over and over again by many textile mills through the use of DECERESOL OT. Here is a partial list of applications:

Wetting out cotton piece goods prior to "grey souring."

Wetting out raw cotton in raw stock dyeing machines.

As a penetrant in all types of dyeing including yarn and knitted and woven goods.

As a dispersing agent in the pigment method of vat dyeing.

For rapid wetting out in sanforizing.

For wetting out grey goods prior to kier boiling to insure more uniform boil off and to prevent resist marks in subsequent dyeing.

As a dispersing agent in dyestuff mixtures to insure better solubility and to improve color value.

As a dispersing agent for finishing oils to obtain greater softening value.

In desizing baths with enzymes to produce more rapid and efficient desizing.

For boiling off rayons and acetates.

In the woolen and worsted industry as an aid in fulling and carbonizing.

For dyeing Nylon and Vinyon yarns, hosiery, etc.

For the production of highly absorbent products such as mop yarns, paper mill felts, towels and similar fabrics.

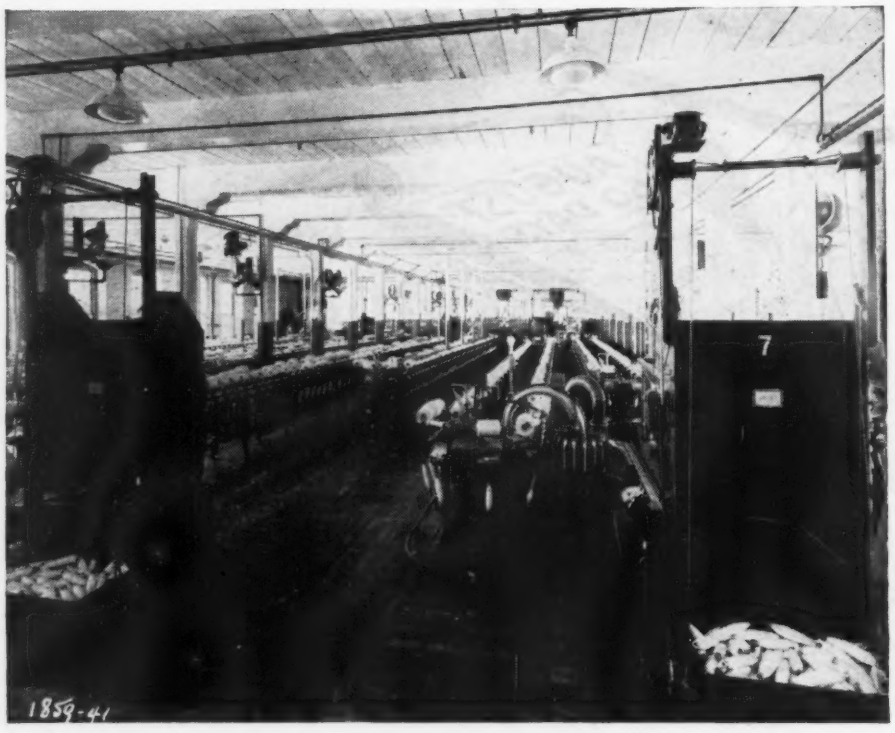
Our representative will gladly give you more detailed information on the DECERESOL *Wetting Agents and help you select the type or types best suited to your operations.*

AMERICAN CYANAMID
& CHEMICAL CORPORATION
(A Unit of American Cyanamid Company)
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

MANUFACTURERS OF
SULPHONATED OILS • PENETRANTS • SOFTENERS
FINISHES • SIZING COMPOUNDS

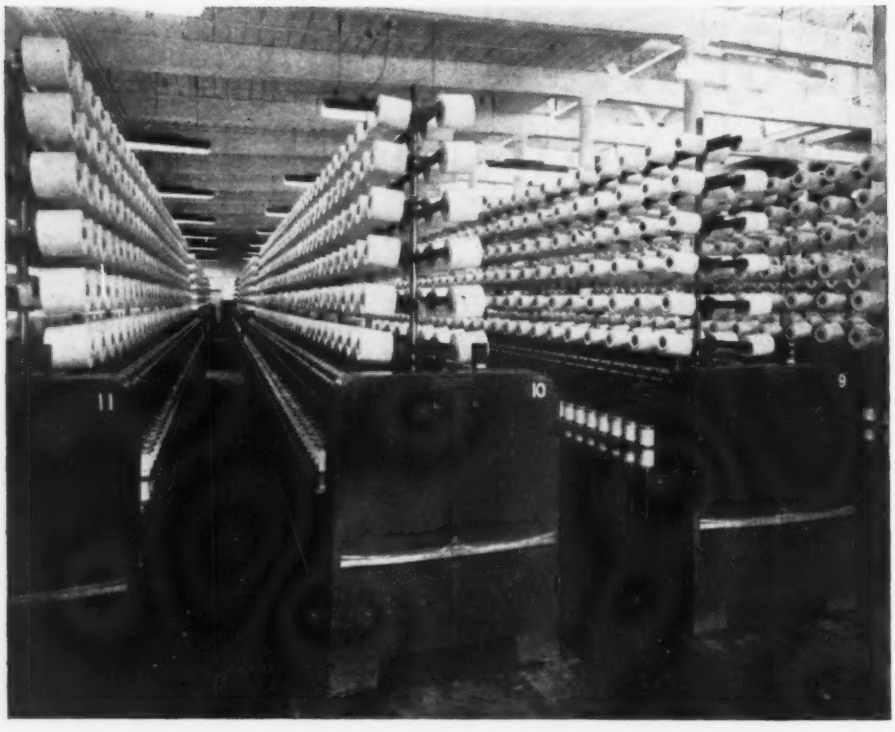
**Reg. U. S. Pat. Off.*

AUTOMATIC WINDING FOR TWISTERS



Winding Average hourly production per operator 900 to 1000 bobbins per hour.

2-oz.	Bobbin	....	112 lb. hr.
3-oz.	"	....	169 " "
4-oz.	"	....	224 " "
5-oz.	"	....	280 " "
6-oz.	"	....	338 " "
7-oz.	"	....	380 " "
8-oz.	"	....	448 " "



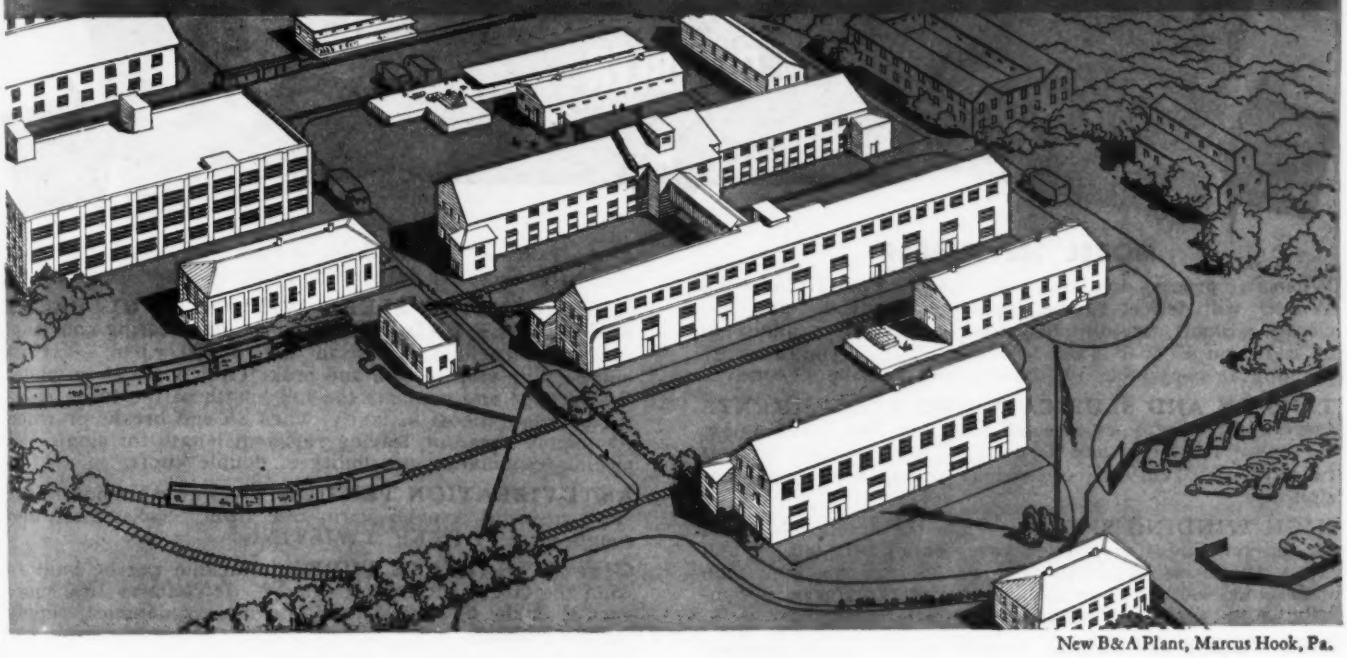
Large 5 to 6 pound cheeses in creel. On average work one set will run 100 hours. Pieces go back directly to winders to be filled up again

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative. Mr. L. S. Ligon, Greenville, S. C.

AGAIN *GENERAL CHEMICAL* CREATES NEW FACILITIES FOR BAKER & ADAMSON PRODUCTS TO SERVE AMERICAN INDUSTRY!



New B&A Plant, Marcus Hook, Pa.

THESE NEW FACILITIES for production of Baker & Adamson reagent and fine chemicals provide ideal manufacturing areas, additional research and development laboratories, and special storage and shipping accommodations. This plant's output, coupled with that of other Baker & Adamson producing units and distributing stations throughout the United States, marks another forward step in Baker & Adamson leadership.

Basic materials for many Baker & Adamson quality products made here come directly from sixteen of General Chemical Company's producing locations. With such fundamental sources of supply, including many Company-owned mines for raw materials, Baker & Adamson is in a pre-eminent and unique position for meeting the expanding uses of high-purity chemicals in industry.

Whether you require laboratory reagents, fine chemicals, or other products prepared in accordance with your formulae—avail yourself of the Baker & Adamson facilities. Experienced technical service representatives are ready to discuss *your* chemical problems and requirements. Baker & Adamson stocks are carried in many principal cities!

GENERAL CHEMICAL COMPANY

Fine Chemicals for Industrial America

GENERAL CHEMICAL COMPANY

40 RECTOR STREET, NEW YORK 6, N. Y.

Technical Service Offices: Atlanta • Baltimore • Boston • Bridgeport (Conn.) • Buffalo • Charlotte (N.C.) Chicago • Cleveland • Denver • Detroit • Houston • Kansas City • Milwaukee • Minneapolis New York • Philadelphia • Pittsburgh • Providence (R. I.) • St. Louis • Utica (N. Y.)

Pacific Coast Technical Service Offices:
Los Angeles • San Francisco • Seattle, Wenatchee and Yakima (Wash.)

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

FOR PREPARING WORSTED YARN FOR TWISTING

The FOSTER MODEL 102 WINDER and the FOSTER MODEL 57 DOUBLER*

MODEL 102 WINDER

When two process doubling is desired, the Foster Model 102 Winder will deliver to the doubler economically and efficiently wound, carefully inspected yarn, with a minimum of knots, on 6" or 7" (wood) cones. The 7" cone is more economical, containing 10% more yarn than the 6" cone.

TENSION AND SLUB CATCHING ATTACHMENTS (several different types) are self threading and self cleaning. Minimum tension, when desired, reduces breakage of soft twist yarns. Tension increased by adding weights to tension disc.

HIGH WINDING SPEED. While the practicable speed for different kinds of worsted yarns varies between 300 and 650 y.p.m., it is uniformly higher with this machine than with older models. Combined with other features, it contributes to twice the production at two-thirds the cost.

ANY ANGLE OF WIND, from 9° to 18°, can be obtained by changing 4 small gears in the head end. This flexibility is important, when running a variety of counts and types.

MODEL 57 DOUBLER

This machine, of course, operates much more economically when winding inspected yarn from cones (particularly "7 Foster cones), handling up to 5 ends in this way. However, it may be equipped with slub catching attachments so that it can be used for single process doubling, drawing in this case usually from 2 or 3 bobbins.

The outstanding features of this machine are as follows:

SHARP BENDS IN THREAD LINE ELIMINATED. After passing over the Doubling Roll, the ends go directly to the Traverse Thread Guide in back of the package. This eliminates excessive drag on the yarn and excessive breakage.

HIGH WINDING SPEED WITHOUT PULLBACKS FOR SINGLE END PIECING. Of ball bearing construction, this machine will wind 300 to 400 y.p.m. Yet its quick-acting stop motion and brake (which comes up under the package and contacts the full length of the tube) stops the package almost instantly, when an end breaks or when the supply runs out, leaving sufficient length for single end piecing, eliminating possibility of double knots.

ANTI-VIBRATION TENSION, gives even tension to the yarn, insuring rounder yarn, free from "corkscrews" and rough places AFTER TWISTING.

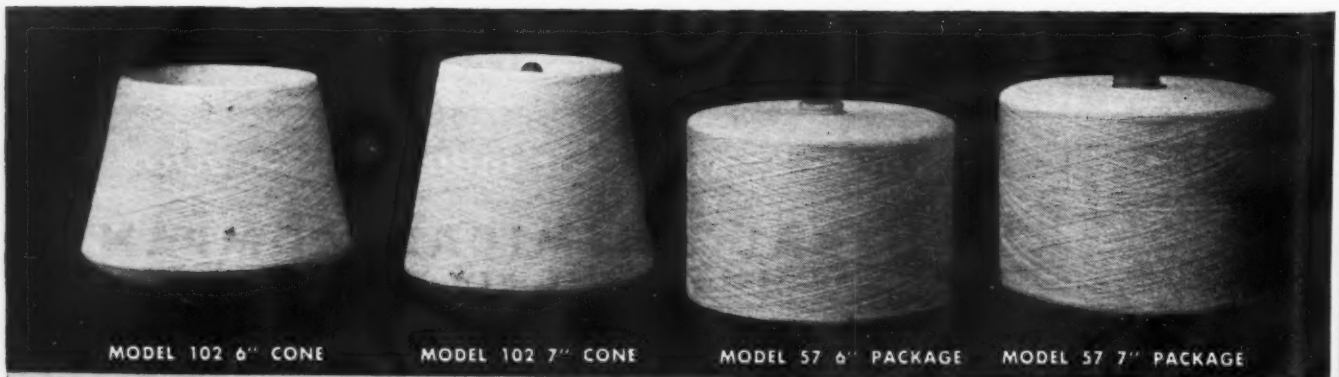
6" or 7" TRAVERSE TUBES. Machine can be built to wind the larger package, if desired. It contains 16% more yarn than the 6" package and is a more economical supply for the twister.

THREAD ROLL GUARD PERMITS QUICK THREADING. Prevents operator from dropping ends over the side.

We recommend doubling because the ends to be twisted are wound with uniform tension and therefore permit more uniform twisting. Furthermore, when using this method, all strands being twisted on a given spindle run out together, eliminating "dropped ply," which is otherwise prevalent where inexperienced help is used.

Let a Foster service engineer recommend a winding and doubling installation for your mill.

*For doubling very coarse yarns, we recommend the Foster Model 56, which winds an 8" traverse package.



FOSTER MACHINE CO., Westfield, Mass.

Southern Office, Johnston Bldg. Charlotte, N. C.

What . . .

IS THE LIGHT FASTNESS AFTER *UREA FORMALDEHYDE* RESIN FINISHING

?

THIS is One Of The Questions Constantly Confronting The Dyer of Spun Rayon Fabrics.

In this booklet it is answered . . . by fastness ratings in Fadeometer Hours, on dyeings of each color in a complete series of Direct and Developed Colors—*before* and *after* finishing. This indicates in the clearest possible way the colors that are comparatively unaffected, those that are improved, *and* those whose light fastness is impaired . . . Other ratings show the effect on strength and shade.

From these colors, that find the widest application to spun rayons, this booklet will help you select the best ones to meet your requirements.

•

ASK OUR REPRESENTATIVE
OR WRITE FOR YOUR COPY

•

DYESTUFFS • CHEMICALS • INTERMEDIATES
CIBA
COMPANY INC.
Greenwich & Morton Sts.
NEW YORK
BOSTON · CHICAGO · MONTREAL · CHARLOTTE
PROVIDENCE · SAN FRANCISCO · PHILADELPHIA
VAT DYES OF THE DOW CHEMICAL COMPANY

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

Homocord

construction in CONVEYOR BELTS -another MANHATTAN development- war-proved for your post-war use

ADVANTAGES of HOMOCORD CONVEYOR BELTS

1. Complete bonding of every member into a homogeneous structure.
2. Holds metal fasteners.
3. Lateral flexibility permits perfect troughing, accurate training, reduces fatigue of flexing at bend in troughing idlers.
4. Resists destructive action of continuous or heavy impact feeding.
5. Cushion Homocord body and low inelastic stretch reduce wear and tear of top cover.
6. Homocord body reduces hazard of punctures.
7. Homocords so completely encased in Flexlastics, moisture not admitted, mildew cannot start. Manhattan Conveyor belts mildew-proofed throughout.
8. Longer life, lower cost per ton.

Here is a totally different type of Strength Member construction — developed in time to speed war production and now improved with FLEXLASTICS* for post-war use.

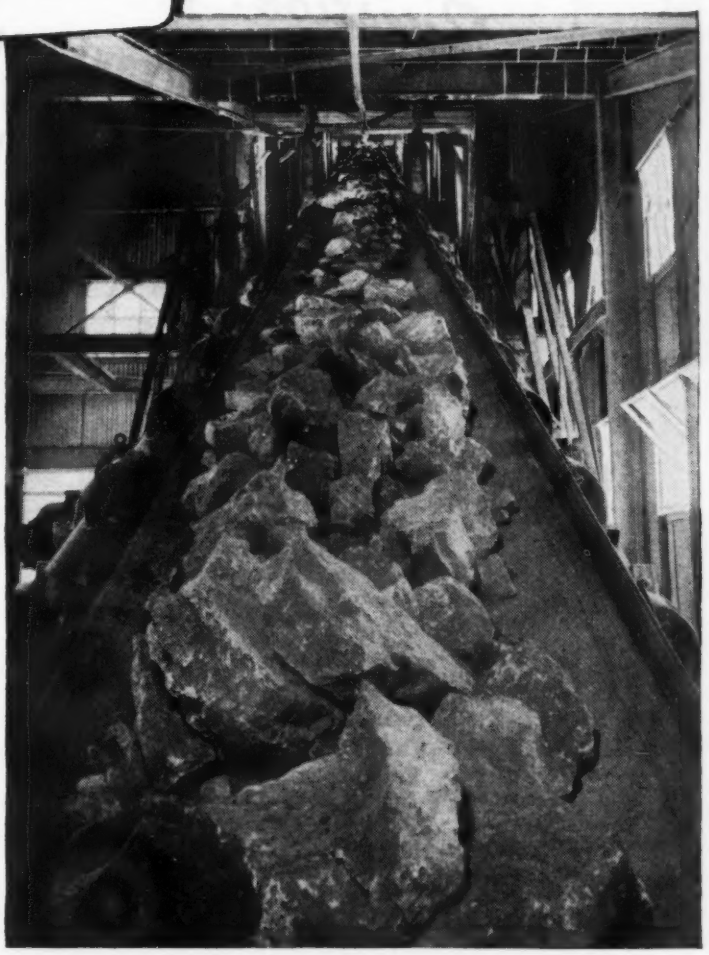
Pre-war installations have been delivering high tonnage on a steady basis that is adding to MANHATTAN'S already distinguished achievements in conveyor belt service.

Homocord construction has been invented and perfected by MANHATTAN engineers particularly and only for conveyor belt use, and it is not designed for use in any other products. It is the first and only conveyor belt possessing the virtues of a cord belt, but with the drawbar strength and resistance to fatigue to hold metal fasteners. It marks a distinct milestone in conveyor belt progress.

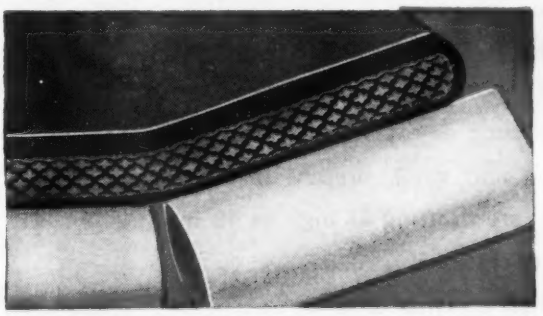
Longitudinal Homocords are grouped to give great tension strength and tied together with cross Homocords which allow exceptional troughing for full loading of the belt, plus the strength to permit use of fasteners.

These component Strength Members are sealed-in to make a homogeneous, pliable belt which flexes easily around end pulleys. The Homocords, embedded in moisture-proof FLEXLASTICS* and mildew-proofed as additional protection, have a flexible, resilient, rolling contact with each other to provide cushioned resistance for heaviest feed impact.

These are significant advantages that will help you meet tomorrow's needs. They are worth investigating now.



Homocord Conveyor handling unusually large pieces of limestone.



Detail of Homocord Strength Member construction. Note how open fabric structure permits rubber to penetrate and unite all parts into a homogeneous whole.

ARMY E NAVY

*The term FLEXLASTICS is an exclusive MANHATTAN trade mark. Only MANHATTAN can make FLEXLASTICS.

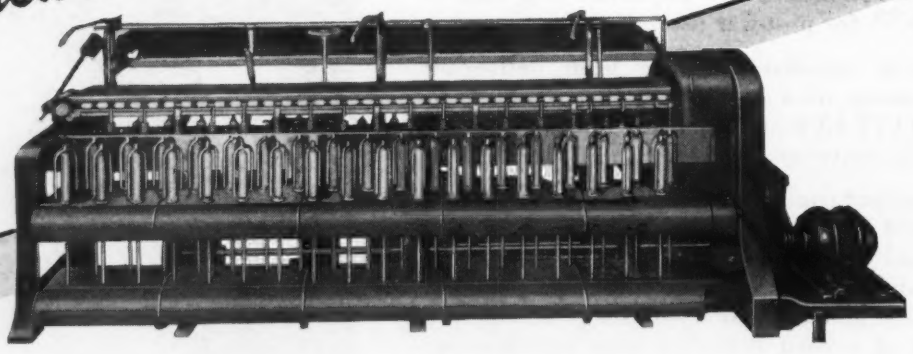
KEEP AHEAD WITH MANHATTAN

THE MANHATTAN RUBBER MANUFACTURING DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES PASSAIC, NEW JERSEY

POST-WAR QUIZ

Question: What machine will replace three conventional-type speed frames?

Answer: H&B HIGH DRAFT ROVING FRAME



HERE'S WHY:

A specially-designed frame accommodates our High-Draft Roving System, 4 or 5 roll, with patented Scroll Condenser. In one operation, this system can produce 3.00 to 6.00 hank roving from 50 to 60 grain sliver. It is today drafting cotton up to 30 on speeders and up to 16 on intermediates. Using mixtures such as rayon and cotton or rayon and wool, present installations are drafting as high as 48 in one operation.

High drafting of sliver has been greatly simplified by the use of our Bakelite Patented Scroll Condenser. By eliminating static and condensing fibres, it prevents flaring and spreading, without disturbing parallelization, giving enough false twist to allow better drafting zone control.

Card room investment is much less with the H & B High Draft Roving Frame, and manufacturing costs have been reduced as much as 6/10 of one cent per lb. of yarn.

Mechanical features include: Exceptionally strong differential gearing . . . draft changes quickly made . . . simplified builder, easily adjustable . . . articulated quiet chain bobbin shaft drive . . . superior finish, including polished non-rusting metallic clearer covers . . . single or double sliver lifting rolls . . . angle iron creels.

Make this machine part of your post-war plans NOW and let us know the details, so that we may assist you to work out a balanced program to meet competitive conditions.

• • •

H & B AMERICAN MACHINE CO.
PLANT AT PAWTUCKET, RHODE ISLAND

Boston Office, 161 Devonshire Street; Charlotte Office, 1201-3 Johnston Bldg., Atlanta Office, 815 Citizens & Southern National Bank Bldg.; Export Dept., United States Machinery Co., 90 Broad Street, New York 4, U. S. A.

UNIFORMITY

Where uniformity of the finished product is an essential consideration, as in the production of textiles, the proper type of Reliance Motor-drive can bring about notably improved results.

When designing machinery for handling such materials, or when starting to work out improvements in existing equipment, you will find that Reliance Motor-drive can be used for many purposes besides providing power. Without mechanical "go-betweens," it performs many operations and gives a control over production that can be obtained only with difficulty, and seldom as satisfactorily, by other and more complicated methods. It should pay you to investigate.

Reliance Range Drives with individually connected motors help insure the uniformity so essential in textile finishing. These Reliance Drives provide complete control of speeds and tension so that material can be kept moving at the highest suitable pace. The result is uniformly good quality and top-notch output for each material and process.

RELIANCE A·C D·C MOTORS

RELIANCE ELECTRIC & ENGINEERING CO.

1088 IVANHOE ROAD • CLEVELAND 10, OHIO

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville (S.C.) • Houston • Los Angeles • Minneapolis • New York
Philadelphia • Pittsburgh • Portland (Ore.) • St. Louis • Salt Lake City • San Francisco • Syracuse • Washington, D.C. • other principal cities

*Extreme

"Tycol EP Lubricants" have proved in extensive field applications their ability to more than meet the requirements of the services for which they are recommended.

Let a Tide Water engineer help you select the proper Tycol lubricant for your needs. His familiarity with Tycol's complete line of lubricants – plus his extensive experience in all phases of industrial lubrication – is your assurance of trouble-free lubrication. Call or write your nearest Tide Water office for further information.

TIDE WATER ASSOCIATED OIL COMPANY

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL • Eastern Division: 17 Battery Place, New York 4, N. Y.

Principal Branch Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

DRUMS! DRUMS! DRUMS!
War needs make it extremely important that all empty drums be returned immediately.

SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE **TYCOL**

PRESSURE (No-2)

* This is the 12th of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.

TIDE WATER LUBRICANIA

DEFINITION: Extreme Pressure Lubricants are lubricants which, under certain operating conditions, permit carrying of loads greater than can be supported by mineral oils of similar viscosity.

This property of greatly increased load carrying capacity may be imparted by incorporation of suitable addition agents. The merits of EP Lubricants are defined by test and performance, rather than by chemical composition alone.

NOTE: The slight increase in load carrying ability which occurs when fatty oils are added to mineral oils is not sufficient to justify such products being termed Extreme Pressure Lubricants.

LABORATORY TEST METHODS: A number of laboratory machines are used for measuring load carrying capacity of lubricants. A series of EP Lubricants evaluated by these machines may not be rated necessarily in the same order, presumably because of differences in design and details of operation among the machines. Caution must be observed in interpreting results derived from any of these individual test methods. The degree of correlation claimed between results from laboratory measurements and those from field performance has not been positively established.

Among the more common machines employed in the laboratory to evaluate load carrying capacity of lubricants are:

The Timken Tester
The Almen Machine
The Falex Lubricant Tester
The Floyd Machine
The Four Ball Machine and
The S.A.E. Machine

At times each type of apparatus has been claimed by its proponents to be a reliable means of evaluating lubricants for a given use. No one machine is recognized generally by technologists as an exact means for predicting field performance of lubricants in all types of service. However, by using any one test machine to compare a lubricant of unknown merit with others of known service performance in a restricted field, some indication of the utility of the unknown lubricant may be secured.

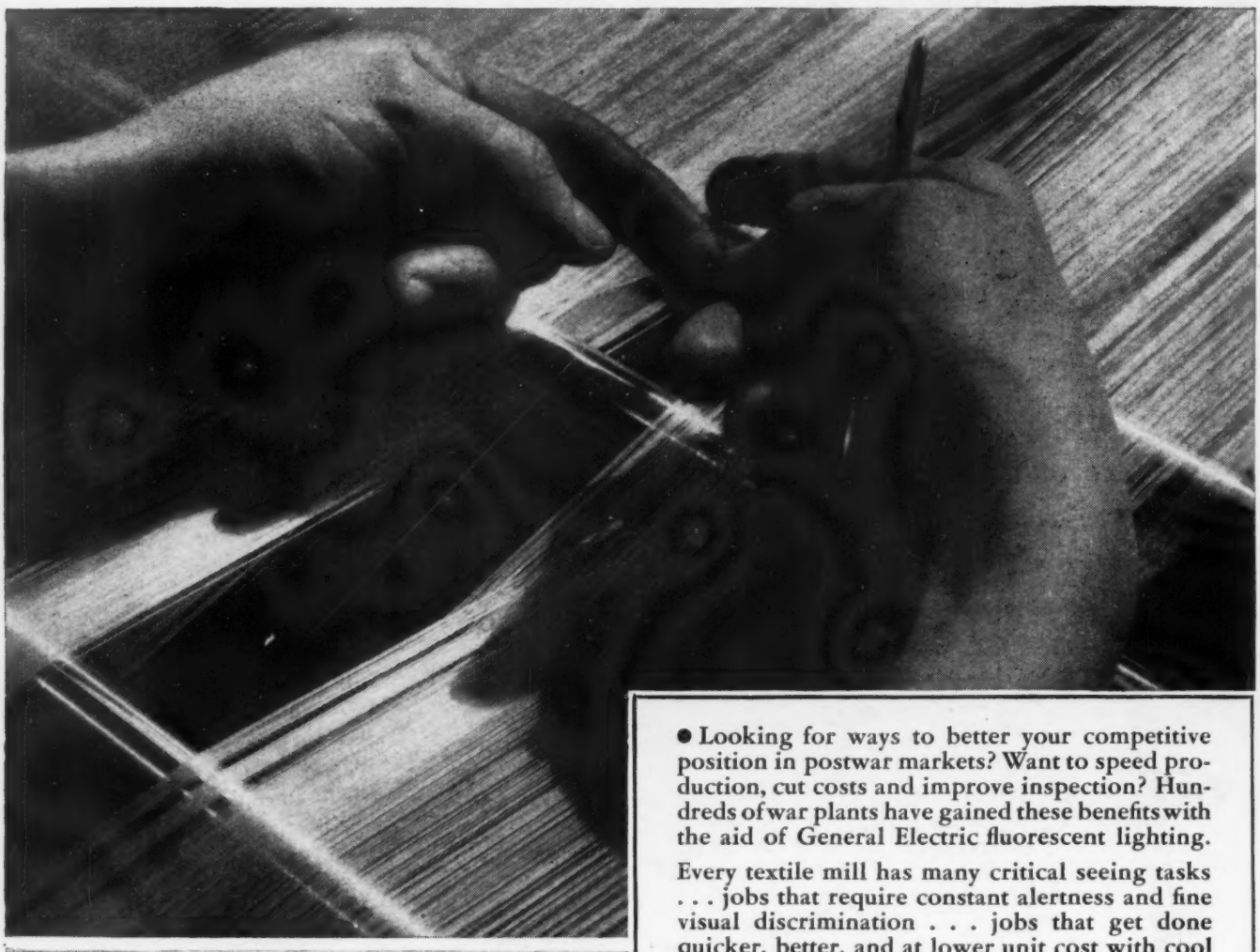
S.A.E. machine for testing EP lubricants, one of many machines used for this purpose.

INDUSTRIAL TYCOL OILS-GREASES

Gasoline Powers the Attack — Don't Waste A Drop

INDUSTRIAL LUBRICANTS

HOW TO GUARD PEACETIME PROFITS
with G-E Fluorescent Lighting



Long lines of G-E fluorescent lighting provide an even spread of light throughout the room. Breaks in fine thread can be detected instantly and supervision brought to new levels of efficiency.

● Looking for ways to better your competitive position in postwar markets? Want to speed production, cut costs and improve inspection? Hundreds of war plants have gained these benefits with the aid of General Electric fluorescent lighting.

Every textile mill has many critical seeing tasks . . . jobs that require constant alertness and fine visual discrimination . . . jobs that get done quicker, better, and at lower unit cost with cool indoor "daylight" from G-E Fluorescent Lamps.

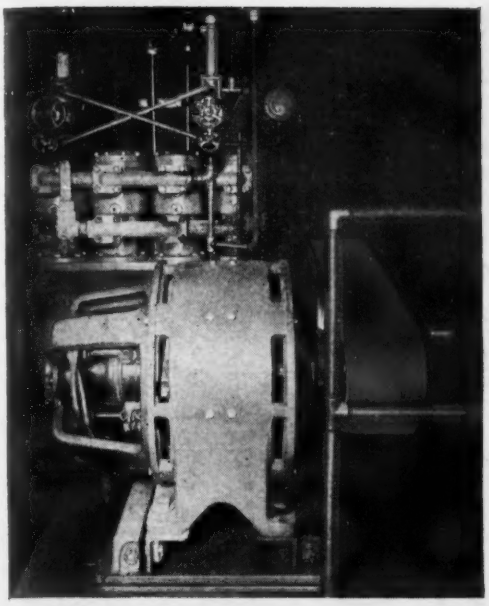
You'll find it pays to make fluorescent lighting with G-E Mazda F lamps an integral part of your postwar planning. General Electric engineers with years of experience in textile lighting problems will be glad to advise you. Just call or write your nearest G-E Lamp office.

"TO MAKE G-E LAMPS STAY BRIGHTER LONGER"
The Constant Aim of G-E LAMP RESEARCH

KEEP BUYING WAR BONDS—KEEP THE WAR BONDS YOU BUY

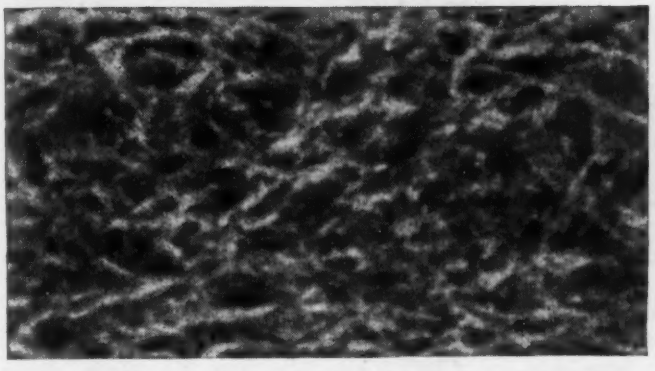
G-E MAZDA LAMPS
GENERAL ELECTRIC

Hear the General Electric radio programs: "The G-E All-Girl Orchestra," Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.

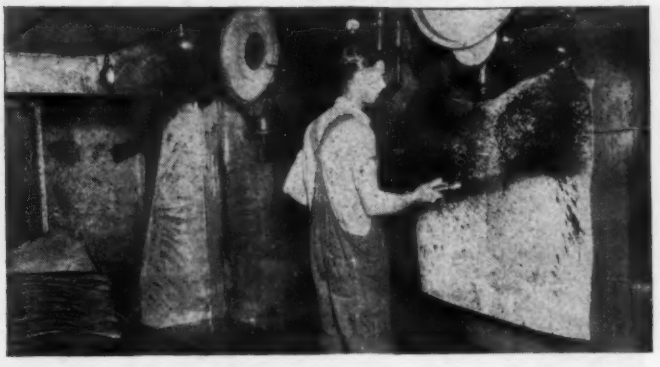


No substitute can equal THIS... for Least Maintenance

As an example of successful change-over to pivoted motor base with flat leather belt drive, this compressor, formerly chain-driven and now belted by a 10½" heavy double "Research" Leather Belt, is reported as operating "with all previous troubles eliminated." 40 H. P. motor, 850 R.P.M., 12" x 12" motor pulley (split fibre lagging over chain sprocket), 36" x 11" driven pulley.



Leather's fibres, interlaced in all directions, give leather belting *resiliency*. Thus *leather*, above all other transmission materials, has the ability to "give" under strain and then "recover". Frequent overloads are handled with minimum slip, without damage to belt, bearings or equipment.



Special "Research" manufacturing processes add a second "plus" to the "plus" you get from any first-quality leather belt — guaranteeing 3% greater production. Exclusive "weight-controlled" curry (shown above) gives maximum pulley grip . . . pre-stretching according to hide characteristics eliminates non-elastic stretch . . . patented "tension-cementing" gives positive ply adhesion strength.

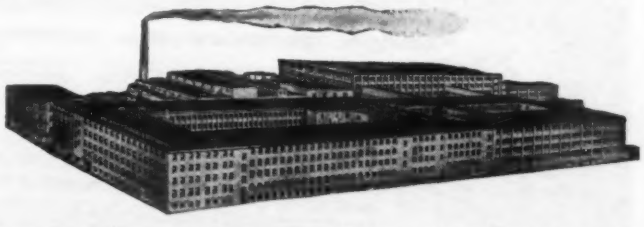
Extra Values from "Research" Belting's

"DOUBLE PLUS"

(all that's *better* in leather, made *best* in "Research")

- **MORE PRODUCTION** with leather belts because of leather's superior traction, which improves with age.
- **MOST PRODUCTION** with "Research" because "Research" processing adds extra pulley grip. 3% more production guaranteed.
- **LESS MAINTENANCE** with leather belts because natural "give-and-take" handles shock loads without undue strain.
- **LEAST MAINTENANCE** with "Research" because pre-stretching removes non-elastic stretch, saving take-ups.
- **LONGER LIFE** with leather belts because leather's tough, interlocking fibres have high resistance to both surface wear and internal friction.
- **LONGEST LIFE** with "Research" because the pre-stretched fibres are properly lubricated by precise, "weight-controlled" currying.

3% MORE PRODUCTION... 2 TO 4 TIMES LONGER LIFE... FROM "RESEARCH" BELTING'S DOUBLE PLUS

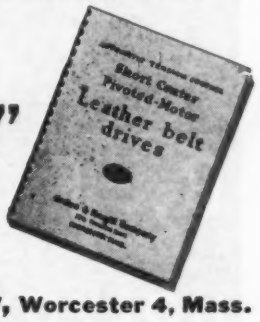


MORE UNIFORM results can be expected from "Research" Belting, manufactured from green hide to finished belt under one roof, under one control, in the world's largest industrial leather plant.

The pivoted-base-flat-leather-belt is the most modern, lowest-cost drive. Write 326 Franklin St., Worcester 4, Mass. for free "Short Center Book".

GRATON AND KNIGHT

"RESEARCH" BELTING

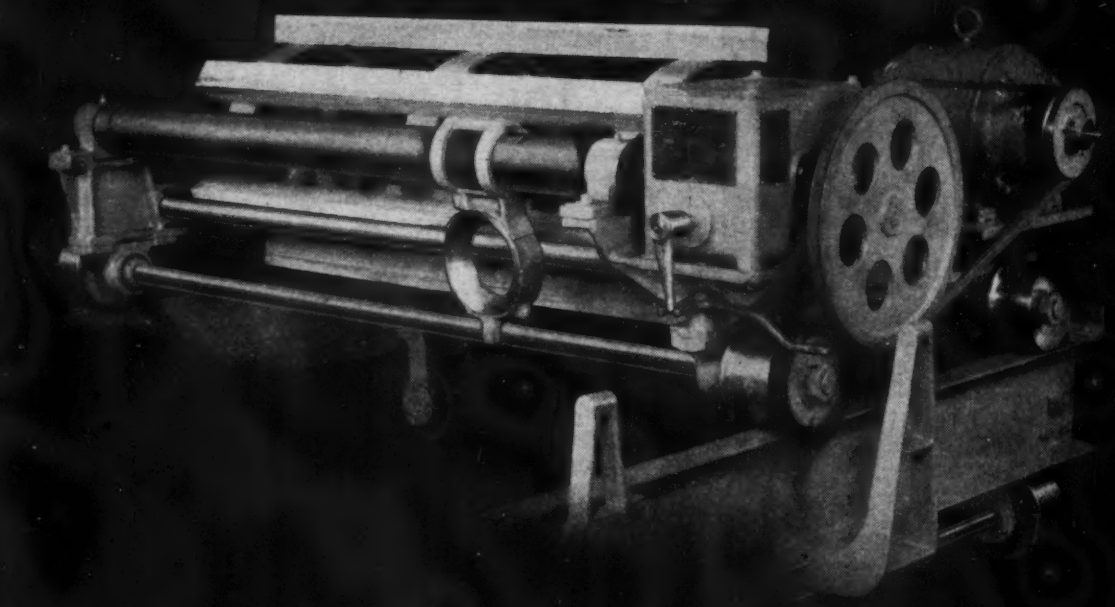


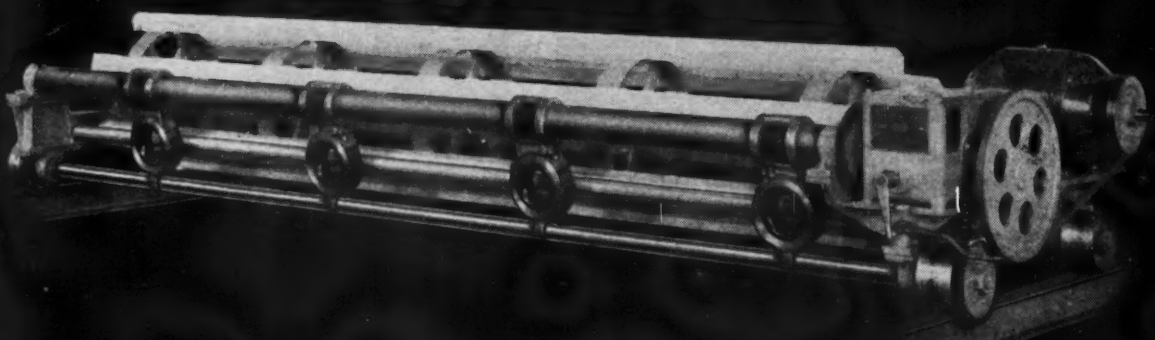
Graton & Knight Company, Worcester 4, Mass.

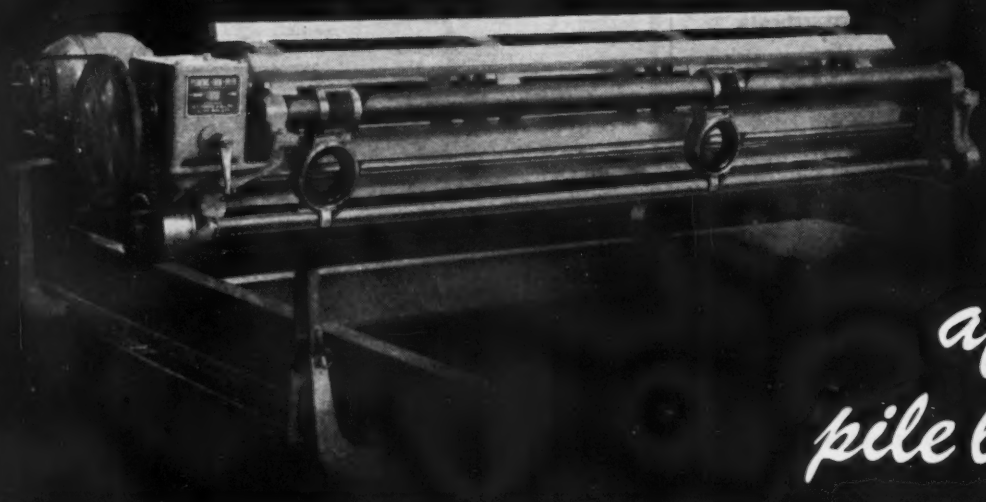
Branches and distributors everywhere. Look under "Graton & Knight" in "Belting" section of classified telephone directory or THOMAS' REGISTER.

PERKINS AUTOMATIC BIN PILERS

PATENTED





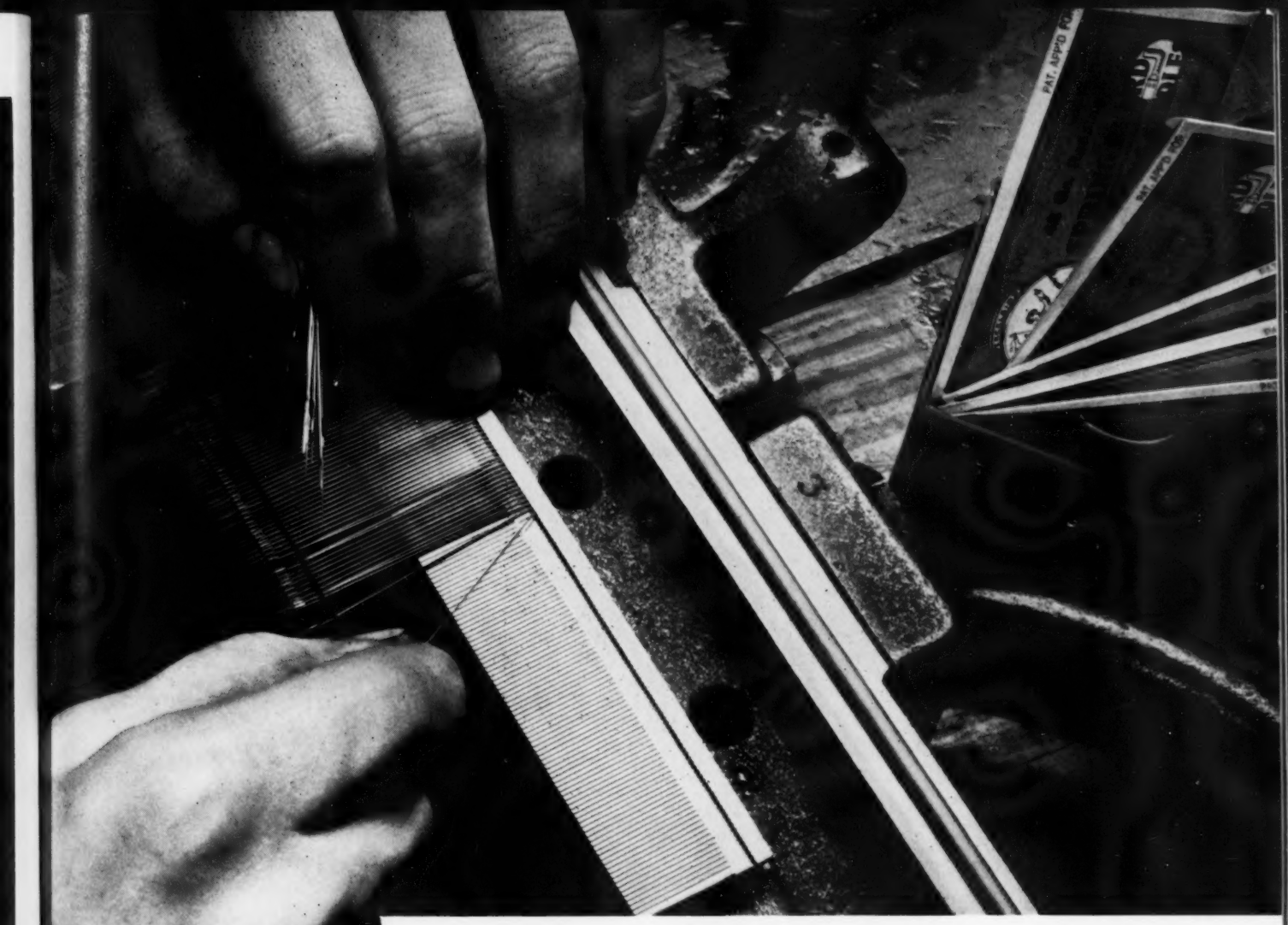


You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

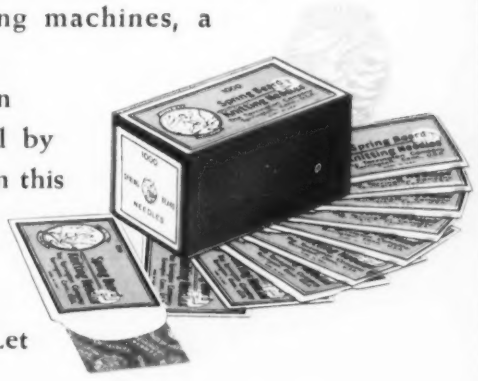


A Reneedling SERVICE

GEARED TO MEET TODAY'S EXACTING DEMANDS

Today, with high speed production and the shortage of skilled labor placing a heavy burden on your knitting machines, a dependable reneedling service is doubly important.

Torrington reneedling is thorough and accurate. It can help you save time and reduce yarn waste in your mill by assuring you better needle performance. For at Torrington this work is done by craftsmen of long experience who work with special equipment. Their methods are the results of years of study and represent one of the most efficient systems of conditioning and alignment ever developed. Let Torrington do your next reneedling job.



THE TORRINGTON COMPANY · THE TORRINGTON COMPANY, LTD.

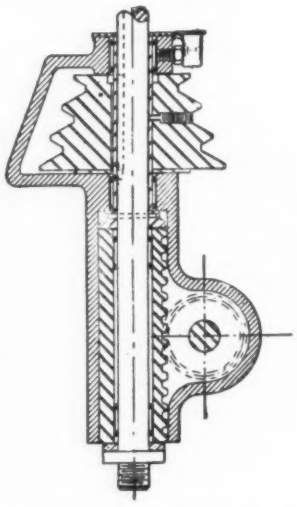
3443 N. Broad St., Philadelphia 40, Pa. Bedford, Quebec, Canada

Torrington

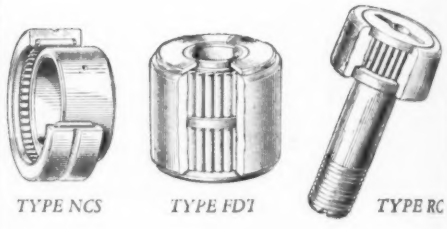
SPRING BEARD NEEDLES · SINKERS · DIVIDERS · SPLIT DIVIDERS

Needle Bearings Aid Design Simplification

TYPE DC *DC (Inner Race)* *TYPE AT*



This X-section of a drill press spindle illustrates simplicity of design possible due to compact size, high capacity and ease of lubrication of Needle Bearings.



TYPE NCS *TYPE FDT* *TYPE RC*

FEATURES OF THESE MODERN ANTI-FRICTION UNITS ALL CONTRIBUTE TO INCREASED OPERATING EFFICIENCY

In almost any application where Torrington Needle Bearings are employed, the design problem is simplified—due to the unusual combination of advantages which these modern anti-friction bearings offer.

The advantage of higher capacity in smaller space, for example, means that smaller, simpler housings may be employed. This in turn means less material is required in the housings, with a consequent reduction in weight and lighter, more compact design of other members is often made possible.

The efficient lubrication of Torrington Needle Bearings is another feature which aids the designer. The retaining raceway which holds the full complement of needle rollers also provides a natural reservoir for retention of the lubricant. Thus, in most designs, need for auxiliary seals and special lubricating systems is eliminated. In fact, in certain applications, Needle Bearings lubricated on installation, will operate entirely satisfactorily without further service attention during the life of the product!

Assembly Also Simplified

Production and assembly problems are also simplified, thanks to the ease of handling and installation of Torrington Needle Bearings. The designer need only provide the simplest type of bearing mount—a bore machined to proper dimensions. Also, as Needle Bearings will not creep or slip, spacers or other locking devices are not necessary to hold them in place under either rotating or oscillating operation.

All of these features contribute to simplification of design—with resulting increases in operating efficiency, longer service life and manufacturing economies that are helping now in meeting wartime production. And they will be of equal value in meeting the demands for the peacetime products of tomorrow. Investigate for yourself the ways in which Torrington Needle Bearings will aid your postwar plans. The Torrington Needle Bearing Catalog 30-A gives more complete information. In addition, the services and experience of our engineering department are available to assist you in securing full advantages of the application of Needle Bearings in *your* products.

THE TORRINGTON COMPANY

Established 1866 • Torrington, Conn. • South Bend 21, Ind.

"Makers of Needle Bearings and Needle Bearing Rollers"

New York Boston Philadelphia
Detroit Cleveland Seattle
San Francisco Chicago Los Angeles
Toronto London, England

TORRINGTON
NEEDLE BEARINGS

modern material for modern textile mills

EVERY year a larger part is played in modern textile machinery by Formica laminated plastics, a product in which many grades are made with a base produced in textile mills.

This modern material has an unusual combination of qualities. It is light weight, (specific gravity 1.35, or half that of aluminum) it is non-porous and stain proof, it is hard and durable and wears smoothly without shattering or slivering.

Some of its many uses in textile mills are for loom box linings, separator blades, tops of inspection tables and linings for bodies of factory trucks, silent gear drives on spinning and weaving machinery, knitting machine platforms and many others.

When you buy new machinery take note of the parts that are made with this modern material, that is one mark of up-to-date design.

"The Formica Story" is a moving picture in color showing the qualities of Formica, how it is made and how it is used. Available for meetings of textile groups.

FORMICA

THE FORMICA INSULATION COMPANY, 4668 SPRING GROVE AVENUE, CINCINNATI 32, OHIO

"I Got the Idea at a War Plant!"

Of course, Simpkins' office assembly line is a flop. Instead of saving effort, it creates *extra* work.

Eliminating waste motion is a special function of Uarco forms. These continuous forms, with carbons interleaved, keep typists typing . . . put an end to carbon fuss, realigning, and inserting. Uarco forms eliminate errors due to copying and recopying. One person at one time can often make enough carbons for each department.

Wherever records are kept, Uarco forms can be used. They are made to fit your particular type of record keeping. Uarco forms are designed either for handwritten use or for machine-written use. May be carbon interleaved or non-interleaved; may be used in Uarco Autographic Registers or in a typewriter, billing machine or tabulating machine. These forms are scientifically designed to co-ordinate your business transactions . . . to speed and simplify complicated operations by routinizing repetitive action.

Uarco's fifty years of business record experience are at your disposal. There is a solution for your problem . . . or Uarco will devise one. Consult with a Uarco representative today.

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*

TOUGH MOTOR JOB?... AND HOW!

"Double the horsepower, increase pumping capacity 50%, cut the weight to one-third."

These were the requirements when Star resumed production of submersible pumps for the Navy at the outbreak of the war. Developed by Star after the first World War, pumps were required to deliver water at a rate of 135 gallons per minute at a head of 35 feet—to operate only a few hours at a time. And now—*double* the head to 50 feet—*increase* delivery to 180 gallons per minute, provide continuous operation!

Star engineers—Specialists in "TIGHT SPOTS"—met the requirements and surpassed them—with motors that exceed the pumping requirement of 180 gallons per minute—that have operated continuously on test 6271 hours at a time, to pump 75,252,000 gallons of water. That's 314,365 *tons* of water—and still going strong!

Perhaps you'll never need a motor to meet such extreme needs. But isn't it a satisfaction to know that your motor requirements can receive the same STAR engineering?

STAR ELECTRIC MOTOR COMPANY • BLOOMFIELD, NEW JERSEY

• Time: October, 1943. Scene: The Coral Sea. An American cruiser is torpedoed; water is pouring in through a huge hole below the waterline. Forward gun turrets have been shot away. Powder-fed flames leap mast-high. Jap shells inflict additional damage as the cruiser turns from the scene of battle, supposedly in sinking condition. But she doesn't sink! Submersible pumps go into play as seamen stuff gaping holes with blankets, mattresses; shore up bulkheads. With the help of Submersibles the battle with the sea is won, the U. S. Cruiser lives to fight again.

POWER PACKAGED AS YOU NEED IT

STAR MOTORS

WINDING AT 5000 R.P.M. ON FAFNIRS

The Whitin-Schweiter Automatic Filling Winder has brought new standards of speed and efficiency to American textile mills. Fafnir Ball Bearing equipped, its spindle runs at speeds from 3500 to 5000 r.p.m. Each unit is independent and may be set for any required bobbin length or adapted to any type of textile fiber. An ingenious feature is the Fafnir-mounted feeler roller which controls the diameter of the wound yarn so precisely that the most delicate fibers are not damaged.

The main drive shaft runs on Fafnir Self-Aligning Bearings. Fafnir Standard Radial Bearings and Extra Small Radials assure friction-free, precision operation to other moving parts. This is an excellent example of how advanced machine design together with dependable Fafnirs can produce better work, greater output at decidedly lower cost. The Fafnir Bearing Company, New Britain, Conn. Branch Offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . Dallas

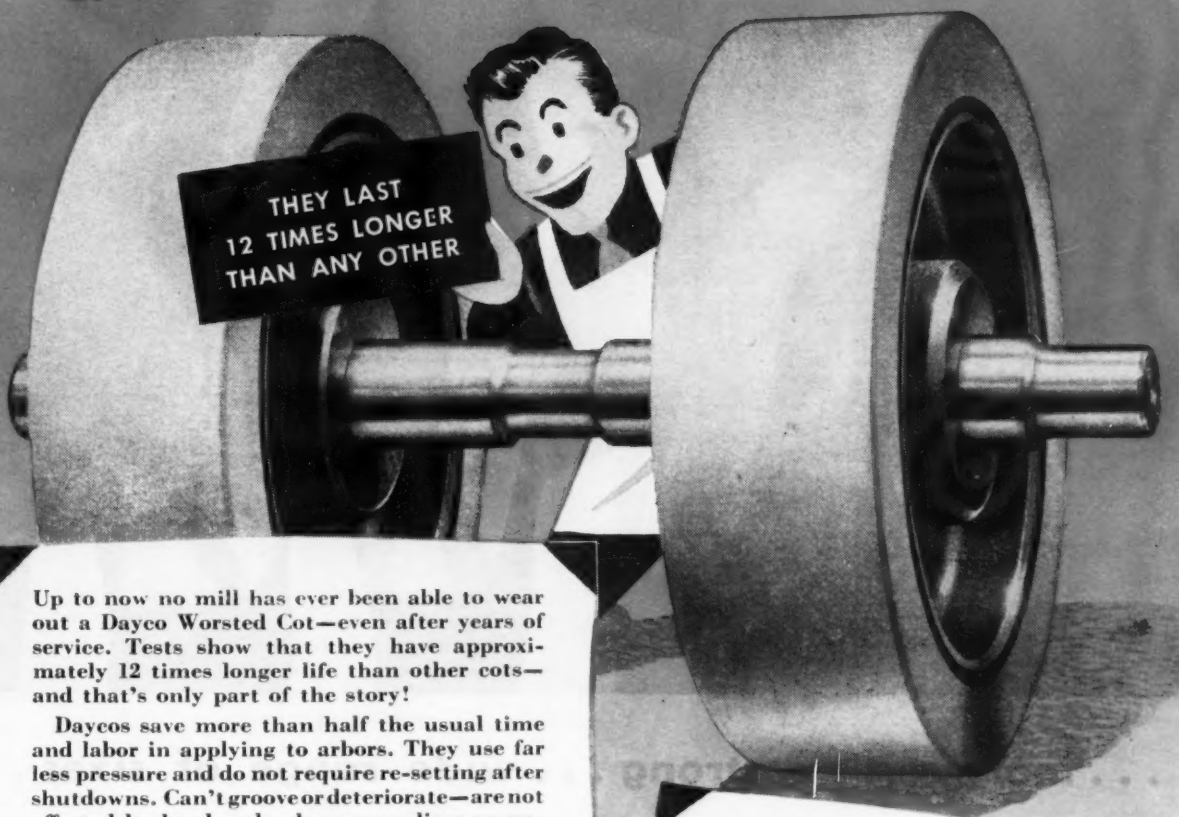
THE WHITIN-SCHWEITER WINDER USES THESE THREE TYPES

Single Row Radial | Extra Small Radials | Self-Aligning Bearing

FAFNIR
BALL BEARINGS

BUY WAR BONDS AND STAMPS

Just try to Wear Out a DAYCO WORSTED COT!



Up to now no mill has ever been able to wear out a Dayco Worsted Cot—even after years of service. Tests show that they have approximately 12 times longer life than other cots—and that's only part of the story!

Daycos save more than half the usual time and labor in applying to arbors. They use far less pressure and do not require re-setting after shutdowns. Can't groove or deteriorate—are not affected by hard ends—have no splices or uneven spots.

Always Dayco Worsted Cots help you to get *more* production and more *uniform* production. Read the 8 Exclusive Advantages—then write for full information.

THE DAYTON RUBBER MFG. CO.
Famous Dayco Synthetic Rubber Products Since 1934
DAYTON 1, OHIO — WAYNESVILLE, N. C.
Main Sales Office: Woodside Bldg., Greenville, S. C.
Maintain Victory Speeds—Conserve Your Tires

8 EXCLUSIVE ADVANTAGES!

1. Save time in applying to arbors
2. Outlast others by 12 times or more
3. Reduce power consumption on spinning and drawing frames
4. Reduce matching-up through more uniform yarn production
5. Cut roll replacement on frames
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7. Run any kind of number and/or mixtures of wool, rayon or mohair with equal efficiency and a minimum of lint
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Roll Coverings by

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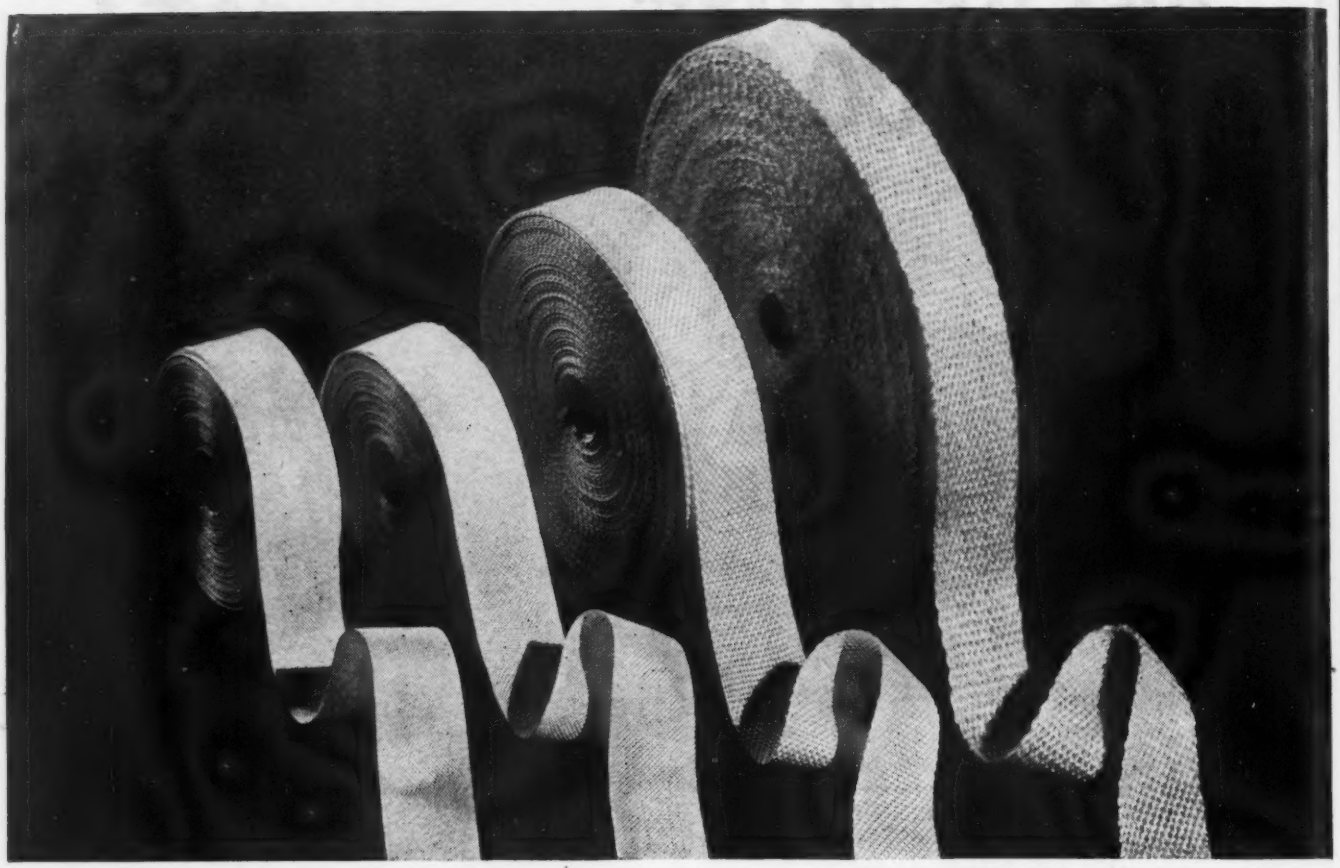
REG. TRADE MARK THE DAYTON RUBBER MFG. CO.

The Mark of Technical Excellence in Synthetic Rubber

FIBERGLAS* Electrical Tapes...



. . . inorganic . . . strong . . . wide range of sizes . . . can help solve <u>your</u> electrical insulating problems

Many complicated electrical design and repair problems have been solved by the use of Fiberglas Tapes. One of the many advantages is their availability in a wide range of widths and thicknesses.

Fiberglas Tapes are as thin as .003" and as thick as .015", with intermediate thicknesses of .005", .007" and .010"... Standard widths range from ⅜" to 1½".

But, you can also add to this feature the extraordinary tensile strength of Fiberglas Tape! Fiberglas Tape—½" x .003"—has an approximate breaking strength of 80 lbs.! Compare this breaking strength with those of *.007" organic tapes!*

Fiberglas Tapes, being glass, have many properties which make them most desirable for use in the insulating of electrical equipment . . . resistance to high temperatures, moisture, oil, corrosive vapors. In combination with suitable varnishes, the result is longer-lasting and more efficient electrical insulation.

Fiberglas is available in all of the standard untreated forms, together with varnished cloth, mica-Fiberglas combinations, varnished sleeving, pressure-sensitive tapes and Fiberglas laminates.

So, whether you manufacture, service, buy or use electrical equipment—Fiberglas is worth knowing about, in every detail.

Fiberglas electrical insulating materials are now IMMEDIATELY AVAILABLE in quantity from distributors' stocks.

When you write for complete information, include a request for your copy of booklet "What Keeps the Wheels Turning" . . . *Owens-Corning Fiberglas Corporation, 1864 Nicholas Bldg., Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.*

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Because of this, U·S·S Steel produces the widest range of stainless shapes and sizes in the world—bars, sheets, plates, strip, pipe, tubing, wire and special sections—in all standard grades and specifications.

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Which drive?

- ELECTRIC
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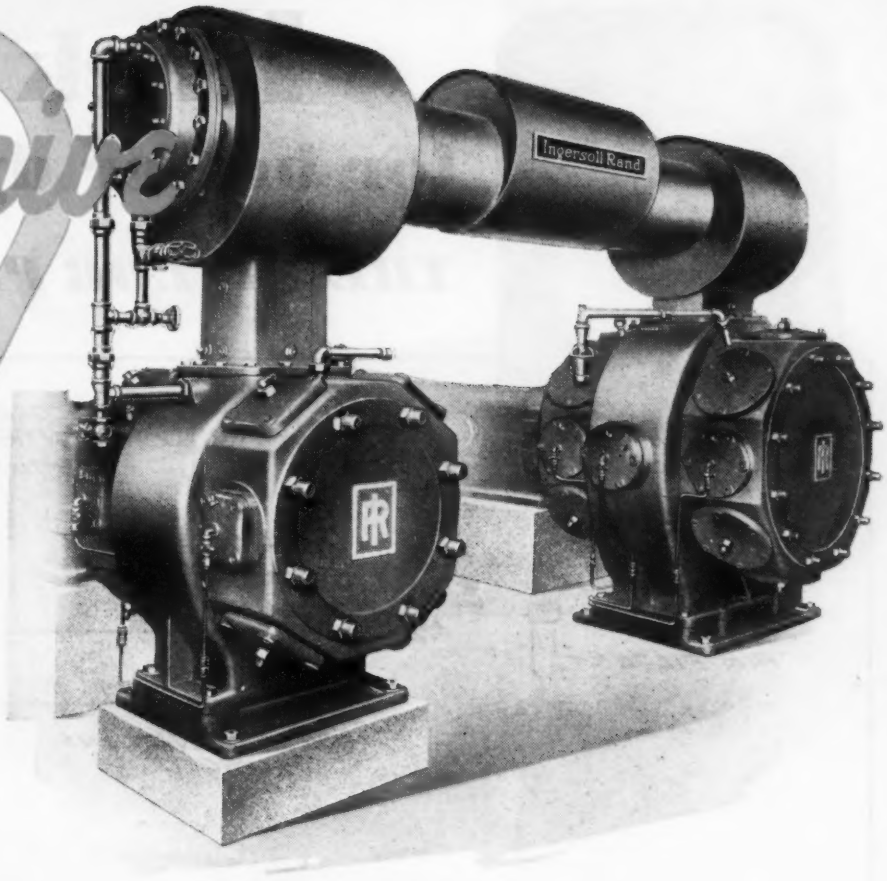

THERE'S ALWAYS ONE BEST DRIVE FOR YOUR COMPRESSOR

Perhaps it's a direct-connected electric-motor which best fits in your over-all power layout . . . a synchronous motor improves the power factor.

Or it may be steam, especially when the exhaust can be profitably used in process work or heating.

Then there are conditions best met by direct-connected oil- or gas-engine drive. In other cases, belt drive may be the correct solution.

But there is always *one best* choice, and there is no need to guess the answer. Ingersoll-Rand can furnish you compressors with any type of drive, and I-R engineers will be glad to study the problem with you, helping you select the compressor which best suits *your* conditions.

Ingersoll-Rand

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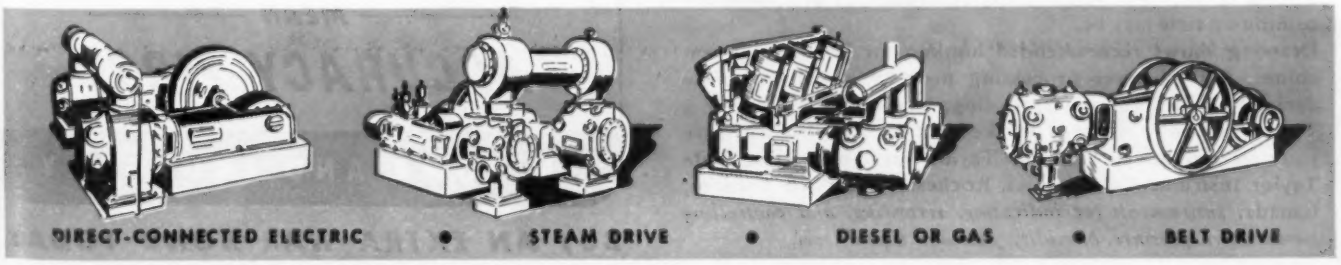
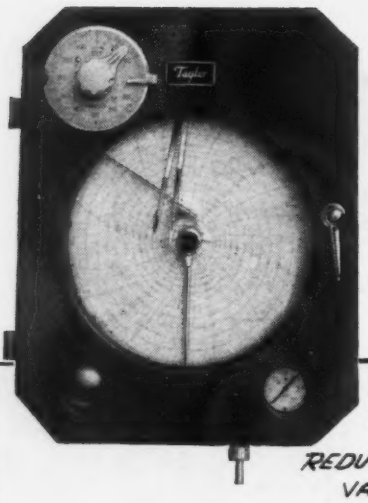
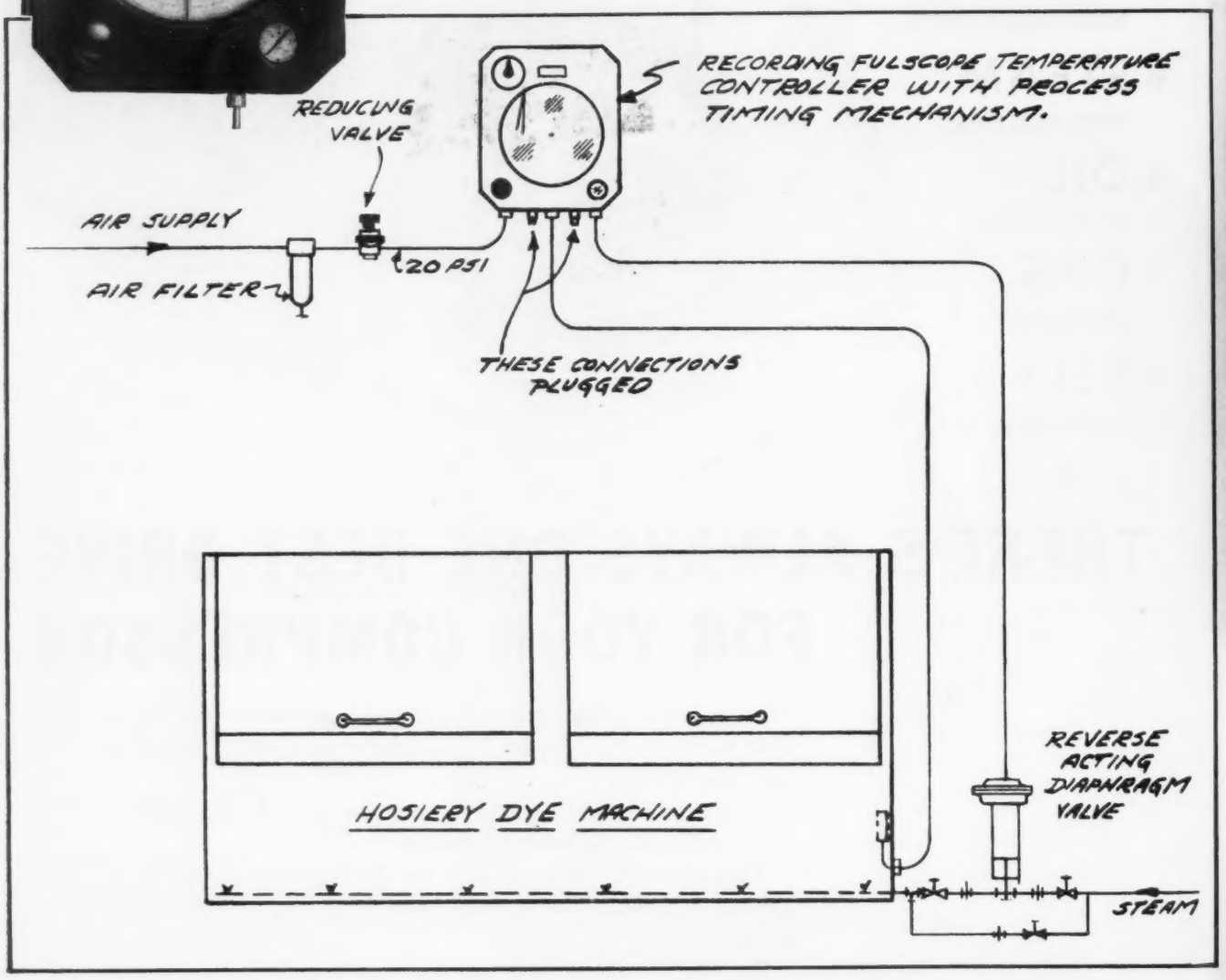




Back again
for better dye control...
THE TAYLOR PROCESS TIMER



NOW—for the first time since the war started, you can have an automatic device that gives you *exact timing of each phase of your dyeing operation,* as well as accurate control of temperature and pressure!

This practically superhuman instrument is the Taylor Fulscope Recording Controller with built-in *Process Timing Mechanism.* All you do is adjust the instrument manually for the desired time period. Timing does not begin *until the dye liquor is brought up to proper temperature,* regardless of how long the coming-up time may be.

Drawing shows recommended hookup for hosiery dye machines. But whatever processing problem you have—piece dyeing, vat dyeing, waterproofing, size cooking—there's a Taylor Control System all worked out for you that will save you time and money! Call your Taylor Field Engineer or write Taylor Instrument Companies, Rochester, N. Y. or Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow and liquid level.*

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...when you use Shell Textilis Oil 24K in your knitting operations

IT'S surprising how shiny and free from rust and gum your knitting needles will be when they're lubricated by Shell Textilis Oil 24K. In fact, its rust-preventive qualities are so effective that a leading manufacturer of knitting machine needles uses Shell Textilis Oil 24K exclusively for protection in packing.

You'll also find Shell Textilis Oil 24K is easily washed out in the finishing process, which reduces staining losses to the absolute minimum.

Shell Textilis Oil 24K is but one of a complete line of lubricants designed specifically for each type of textile machine lubrication.

It will pay you to discuss your textile lubrication problems with a Shell Textile Lubrication Specialist.

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ONE of these GATES V-Belts Will Fit ANY NEED You May Have!

Rayon Cord V-Belts
Static-Safety V-Belts
***Special* Synthetic V-Belts**
Cotton Cord V-Belts
Steel Cable V-Belts

If you have a drive on which V-Belts of special construction may be required for greatest service efficiency, you will almost certainly find that Gates has long been building a V-Belt precisely engineered to fit your special needs.

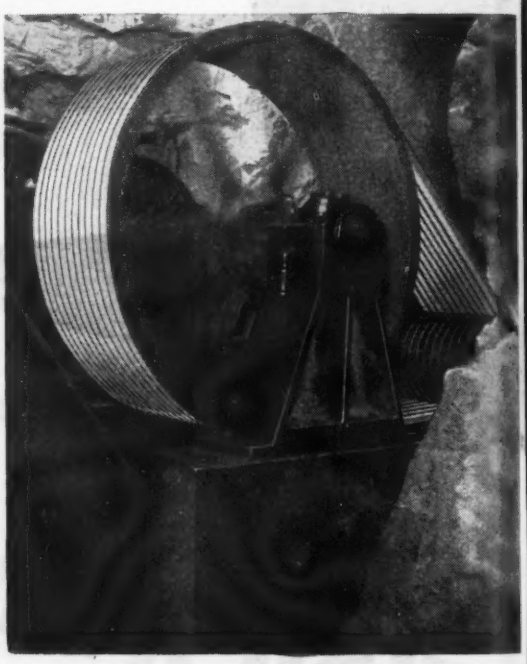
On some installations, for example, a V-Belt, the tension member of which is composed of rayon cords will have advantages over the standard cotton cord construction. Gates has been building Rayon-Cord belts since 1939.

Again, Gates Rubber Engineers have found that a belt built with flexible steel cables as the tension member is sometimes most economical despite its higher initial cost—and Gates has been building flexible Steel-Cable V-Belts since 1935.

For more than six years, the Gates Synthetic Rubber belt has been making amazing service records in large industrial plants all over the United States. Under severe conditions of heat and oil the Gates special Synthetic belt actually wears 2 times to 3 times as long as any natural rubber belt ever used.

It might seem that it would be some trouble to determine whether a synthetic-rayon, a synthetic-steel-cable, or a standard Gates Vulco Rope would be most efficient and economical for your particular application. Actually, this involves no more than picking up your phone.

There is a Gates Rubber Engineer in every industrial center. A phone call will bring him to your plant. He is a specialist in drive operation. He is completely informed on the nature and advantages of every type of belt. He will always recommend the practice that will be most efficient and economical for you



In one of the World's LONGEST TUNNELS

This big blower keeps the air clear in the 13.2 mile Alva B. Adams Tunnel which was "holed-thru" the Continental Divide on June 10. After firing a round, workmen may return to mucking immediately with the air free from smoke or powder fumes. On this big installation, the Gates RUBBER ENGINEER specified standard Vulco Ropes which have performed with splendid efficiency.

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You can get materials for any piping requirement from Grinnell warehouses in the cities listed here. Included are practically every type of materials for simple or complex piping installations. At these Grinnell branches, experienced engineers will assist you to solve any unusual piping problem.

Grinnell piping products are available from your local Grinnell jobber. Send for catalogs and remember Grinnell "whenever Piping is involved".

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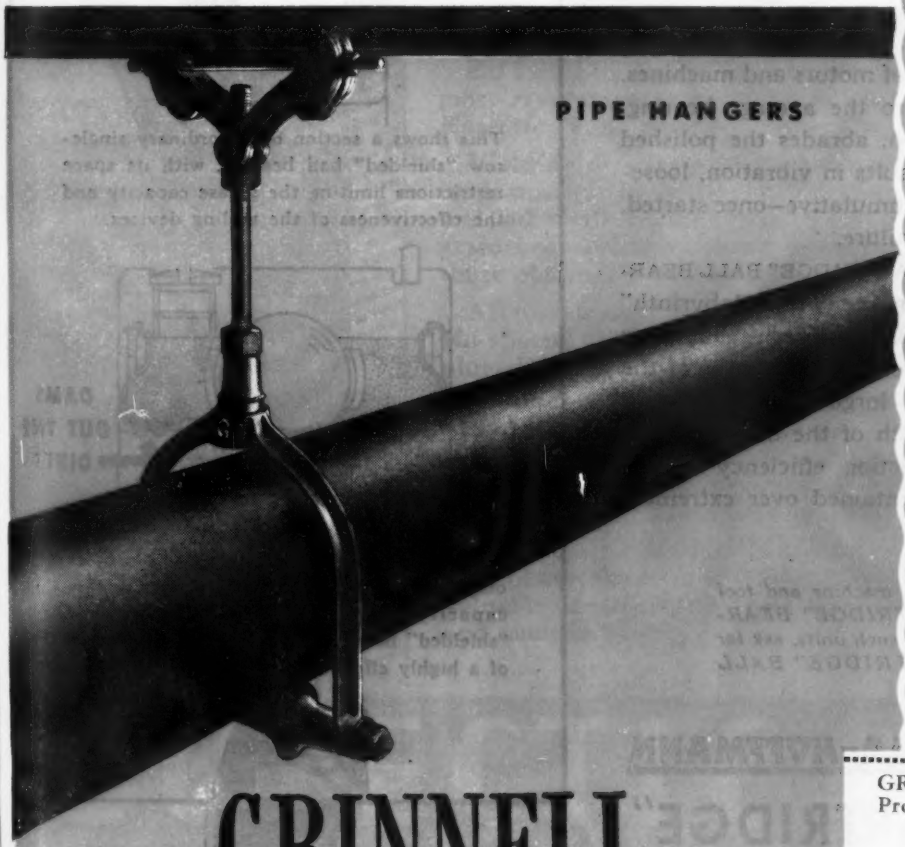
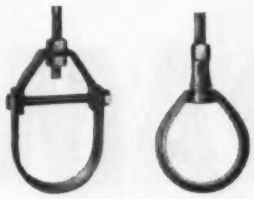
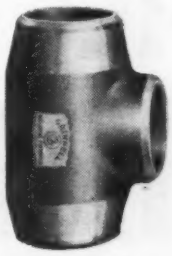


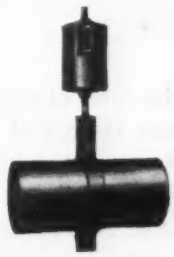
Cast Iron, Malleable, Bronze and Steel Pipe Fittings



Pipe Hangers



Welding Fittings



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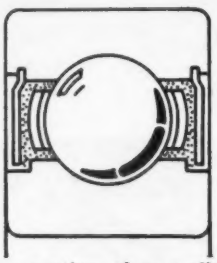
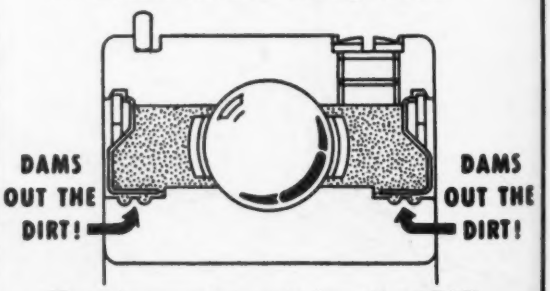
Dirt is the curse of every user of motors and machines. In shop and factory it gets into the average bearing, where it destroys the high finish, abrades the polished surfaces, creates friction that results in vibration, looseness and noise. And its action is cumulative—once started, it leads to premature bearing failure.

In the NORMA-HOFFMANN "CARTRIDGE" BALL BEARING, wearless metal seals combine with "labyrinth" grease grooves to form a highly effective barrier that dams out dirt—at the same time preventing the escape of the lubricant packed in the extra large grease reservoir afforded by the double-row width of the bearing. As a result, the initial high anti-friction efficiency of the "CARTRIDGE" BEARING is maintained over extremely long periods.

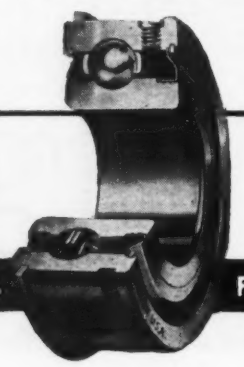
NOTE:—Many representative motor, machine and tool builders are incorporating the "CARTRIDGE" BEARING in their products. When you buy such units, ask for the NORMA-HOFFMANN "CARTRIDGE" BALL BEARING.



This shows a section of an ordinary single-row "shielded" ball bearing, with its space restrictions limiting the grease capacity and the effectiveness of the sealing devices.



Here, in contrast, note how the "CARTRIDGE" BEARING double-row width not only affords at least 100% larger grease capacity than the ordinary single-row "shielded" bearing, but also permits the use of a highly effective and wearless seal.



NORMA-HOFFMANN

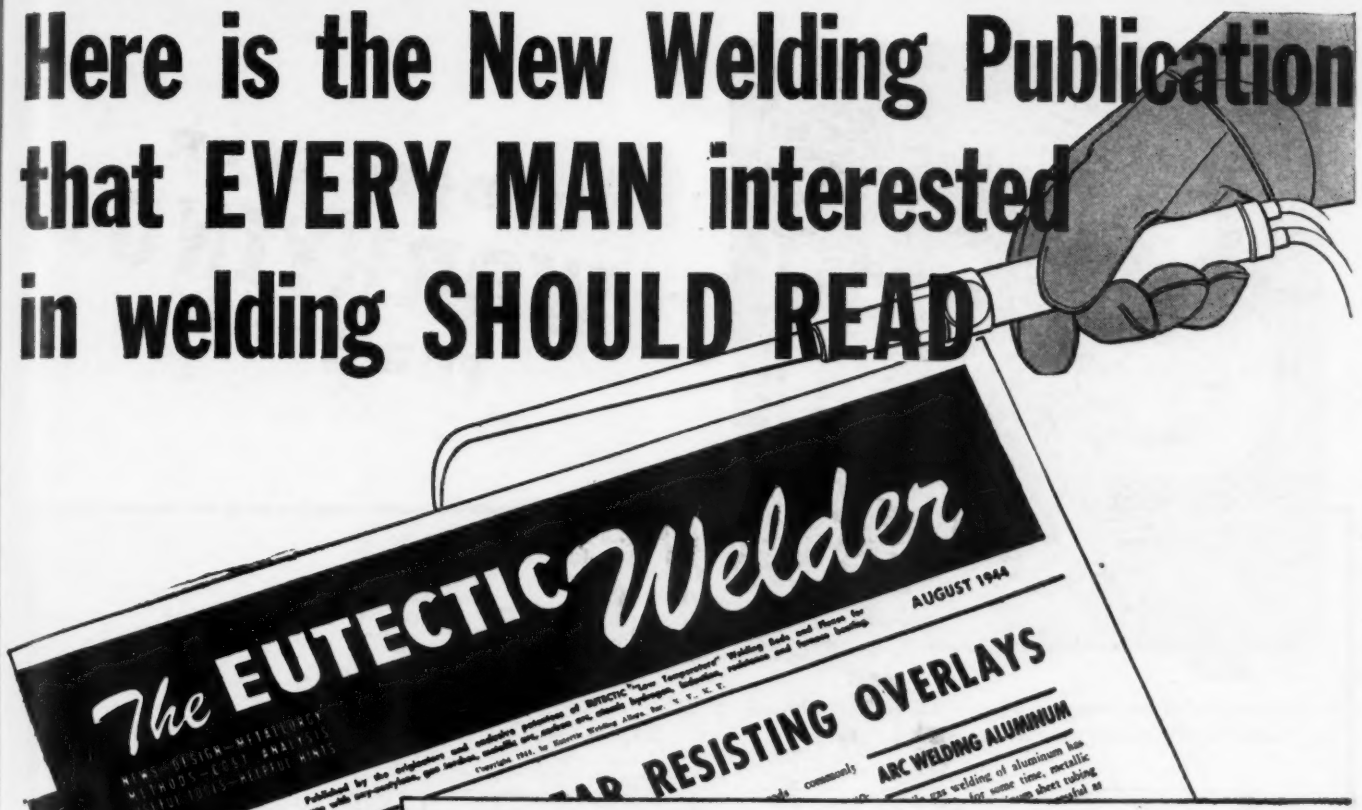
"CARTRIDGE"

BALL BEARING

NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONN. FOUNDED 1911

TO WIN THE WAR: WORK—FIGHT—BUY WAR SAVINGS BONDS!

Here is the New Welding Publication that EVERY MAN interested in welding SHOULD READ



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Welding at temperatures below the fusion point of base metals is made possible by employing the phenomenon of surface alloying. Joints welded with EUTECTIC *Low Temperature* Welding Rods are *smoother, stronger, better color matched* and *more machinable* than those obtainable *by any other welding or brazing process.*

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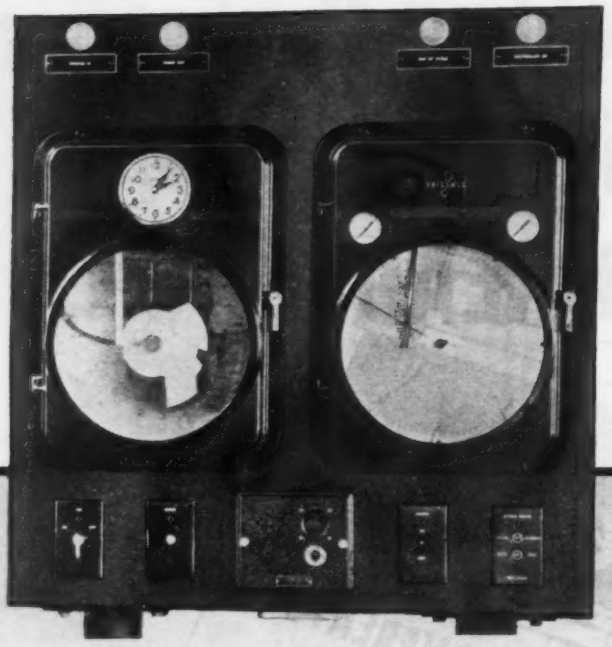
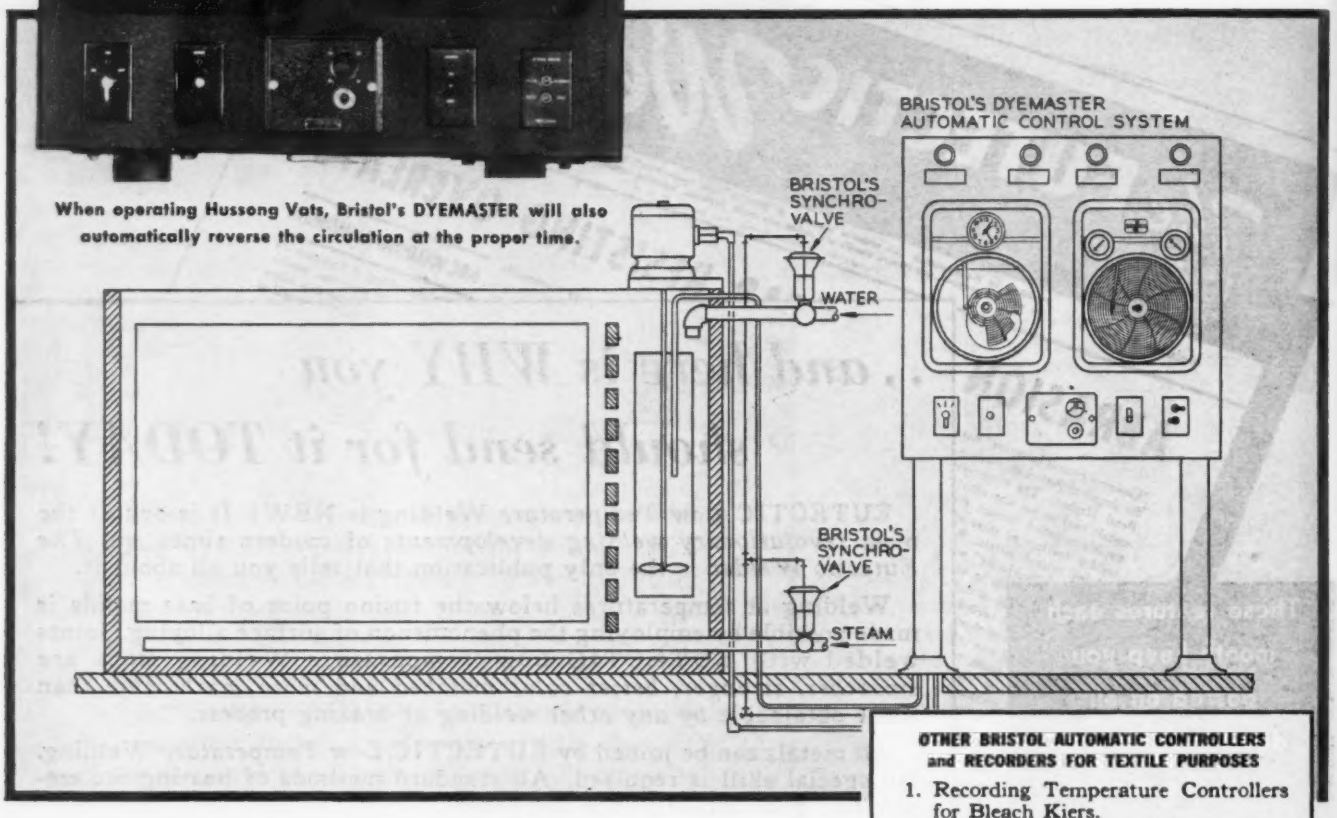


When operating Hussong Vats, Bristol's DYEMASTER will also automatically reverse the circulation at the proper time.



These are some of the things you can forget when your dyeing machines and dye vats are under the automatic control of the Bristol DYEMASTER:

Temperature of water during boil off . . . Temperature at which soap is added . . . Duration of boil off period . . . Time at which wetting agent is added . . . Time at which dyestuff is added . . . Temperature of liquor during dyeing cycle . . . Rate of temperature change . . . Duration of dyeing period . . . Time at which salt is added . . . Discharge of dye liquor to sewer . . . Addition of rinse water . . . Duration of rinse period . . . And in Beam and Package machines and Hussong Machines the instant when circulation must be reversed . . . The duration of circulation in each direction.

Once a correct procedure has been established, the DYEMASTER will see that it is followed faithfully in every succeeding batch — with the following results:

Every shade run exactly alike . . . Savings in dyestuffs, due to elimination of add-dye cycles . . . Saving in steam and water consumption . . . Increased production, due to accurate timing of all steps . . . and elimination of add-dye cycles.

When the formula is to be changed, the complete control system can be revised accordingly, in a matter of minutes.

Write for free Data Sheet No. 27 on DYEMASTER.

OTHER BRISTOL AUTOMATIC CONTROLLERS and RECORDERS FOR TEXTILE PURPOSES

1. Recording Temperature Controllers for Bleach Kiers.
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"Begin whatever you have to do."

AUSONIUS

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

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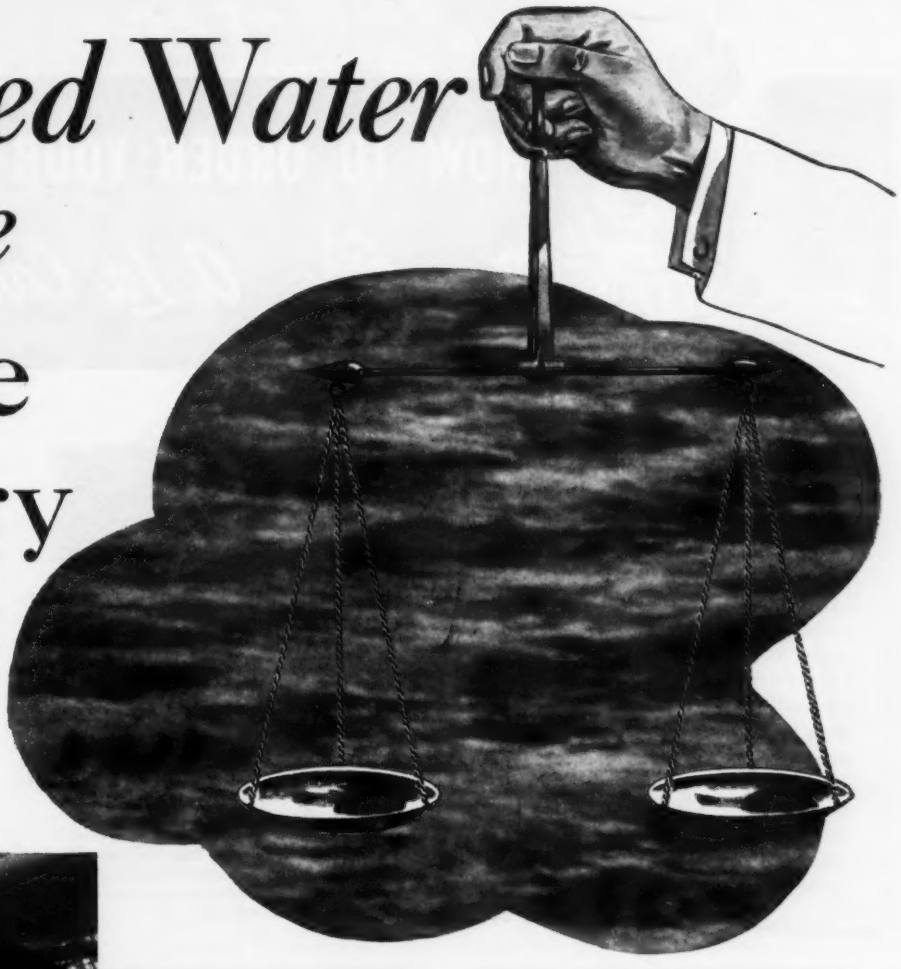
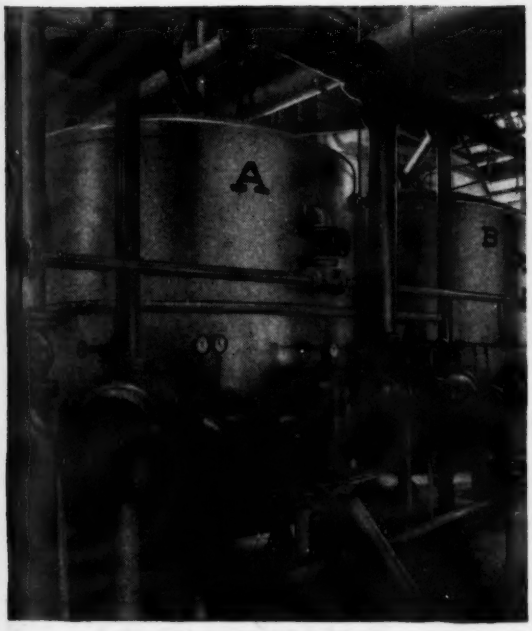
Two Star Army-Navy "E" July 25, 1942

Three Star Army-Navy "E" January 25, 1943

Four Star Army-Navy "E" January 11, 1944

Balanced Water for the Textile Industry





Graver High Capacity Zeolite Water Softening Units.

Any textile man knows that process water must be uniform in softness if consistently satisfactory results are expected. Raw water, even though soft, varies in its degree of hardness, and its use, or the use of improperly conditioned water, can result in loss of man-hours and perhaps in loss of products themselves.

Therefore, textile process water, regardless of its original qualities, should be conditioned, and this conditioning so controlled that absolute uniformity and consistent balance is maintained at all times. Furthermore, since raw water supplies and process requirements are different in different plants, each job calls for a water conditioning system designed for the specific problem at hand.

Graver Zeolite Water Softeners effectively remove the salts which cause hardness, provide the desired degree of hardness, and maintain this uniformity and balance under all conditions. Each unit is designed, built, and installed to meet specific needs and can be supplied with either manual, semi-automatic, or full automatic control, providing efficient, reliable service at low cost.

Consult Graver for expert advice on your water conditioning problems. Our engineers will submit recommendations and estimates without obligation.

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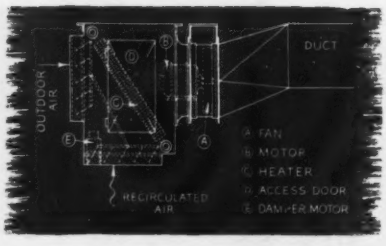
HOW TO ORDER YOUR MILL WEATHER *A La Carte!*

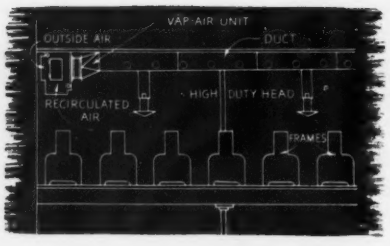
Today's Special!

Yes, today – and every day – you can order Sturtevant Air Conditioning equipment Ala carte–to exactly match your preference and your pocketbook! You don't have to buy everything from soup to nuts if all you need is the main course! Let's talk in terms of *your* particular cooling and humidifying problems. Do you need a complete system? Or auxiliary room ventilation to augment your present system? Or a degree of control somewhere between? From long experience in the textile field, we've developed four plans that can be adapted to precisely satisfy the atmospheric appetites of your weather-sensitive processes. **HERE THEY ARE:–**



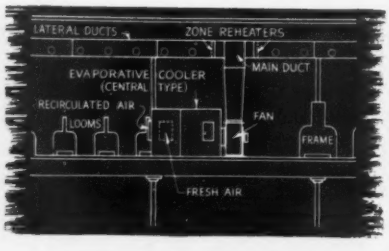
PLAN No. 1—VAP-AIR UNITS

An extremely low-cost standardized unit for room cooling in conjunction with an existing humidifying system, supplying automatically controlled outside air. Easily installed by mill mechanics, it maintains even relative humidity at all times, prevents over-humidification, insures uniform distribution of air. All under automatic control.



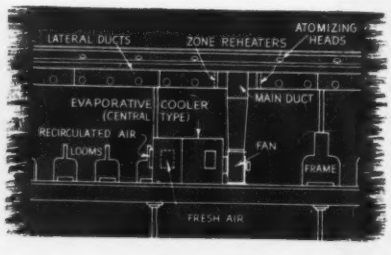
PLAN No. 2—VAP-AIR BLENDER UNITS

plus your head system. A carefully engineered, inexpensive system which provides a *guaranteed* summer temperature reduction. Installation under the supervision of Sturtevant experts includes revision of present humidifying system to provide desired degree of temperature reduction most efficiently. All under automatic control.



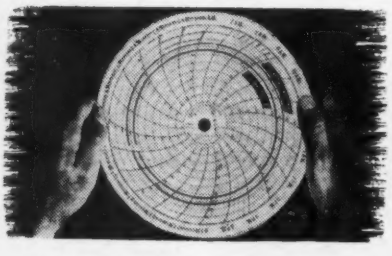
PLAN No. 3—STURTEVANT TEXTILE EVAPORATIVE COOLER & HUMIDIFIER SYSTEM

A "chef's special" system, completely installed, of several unit systems, or one large system. Provides lowest possible temperature obtainable without use of refrigeration. All under automatic control



PLAN No. 4—STURTEVANT TEXTILE EVAPORATIVE COOLER & HUMIDIFIER SYSTEM

combined with supplementary head systems. This is essentially the same as *Plan No. 3* but adapted for rooms requiring humidity above 65%. All under automatic control.



Weather-Chef. The Sturtevant Engineer can *whip-up* the maximum degree of weather control for minimum dollar investment. Room by room . . . operation by operation . . . he can dovetail Sturtevant equipment to match the exact degree of temperature and humidity control essential to profitable production in your various weather-critical processes.

Plan Your Blueprint for Leadership in The Postwar World–*Now!*

LEADERSHIP in the post-war world will be the reward of far-visioned textile men who plan *now* . . . to provide more comfortable, more efficient working conditions . . . to obtain more uniform production at lower costs with fewer rejects or seconds. Sturtevant Engineers are ready to help your post-war planning committee draw-up your "blueprint for leadership"–using time-tested Sturtevant methods of *putting Air to work.* Get in touch today–no obligation, of course.

Cooling and Air Conditioning Division

B. F. STURTEVANT COMPANY • *Hyde Park, Boston 36, Mass.*

Sturtevant

REG. U. S. PAT. OFF.

Puts Air to Work

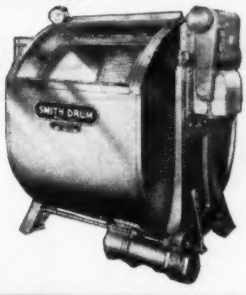
SYSTEMS and EQUIPMENT

Engineered for Efficiency in

Heating
Ventilating
Air Conditioning
Dust and Fume Control
Pneumatic Conveying
Vacuum Cleaning
Mechanical Draft

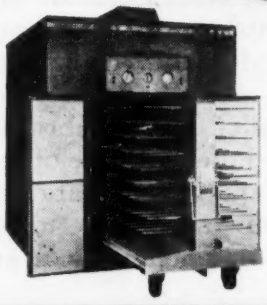
POST-WAR "Post-Mortem" No. 7

Write Now For Information On These Smith-Drum Machines



Rotary Hosiery Dyeing Machines

New Skein Dyeing Machine



New Package Drying Machine

MINUTE MOVIE OF A MAN ORDERING NEW PRODUCTION MACHINES *AFTER* THE WAR IS OVER

Many a textile manufacturer who waits until the war is over to order new machines is going to be "*sadder but wiser.*" Because it's going to be tough to get "*what* you want *when* you want it" . . . and there's no doubt about it.

During the war, textile machines have been worn out at a faster rate than ever before in history . . . and scarcely a single new machine has been built! That adds up to just one crystal-clear fact . . . *there's going to be a demand for new machines after the war that will far exceed the machinery manufacturers' capacity to produce it in any reasonable length of time.*

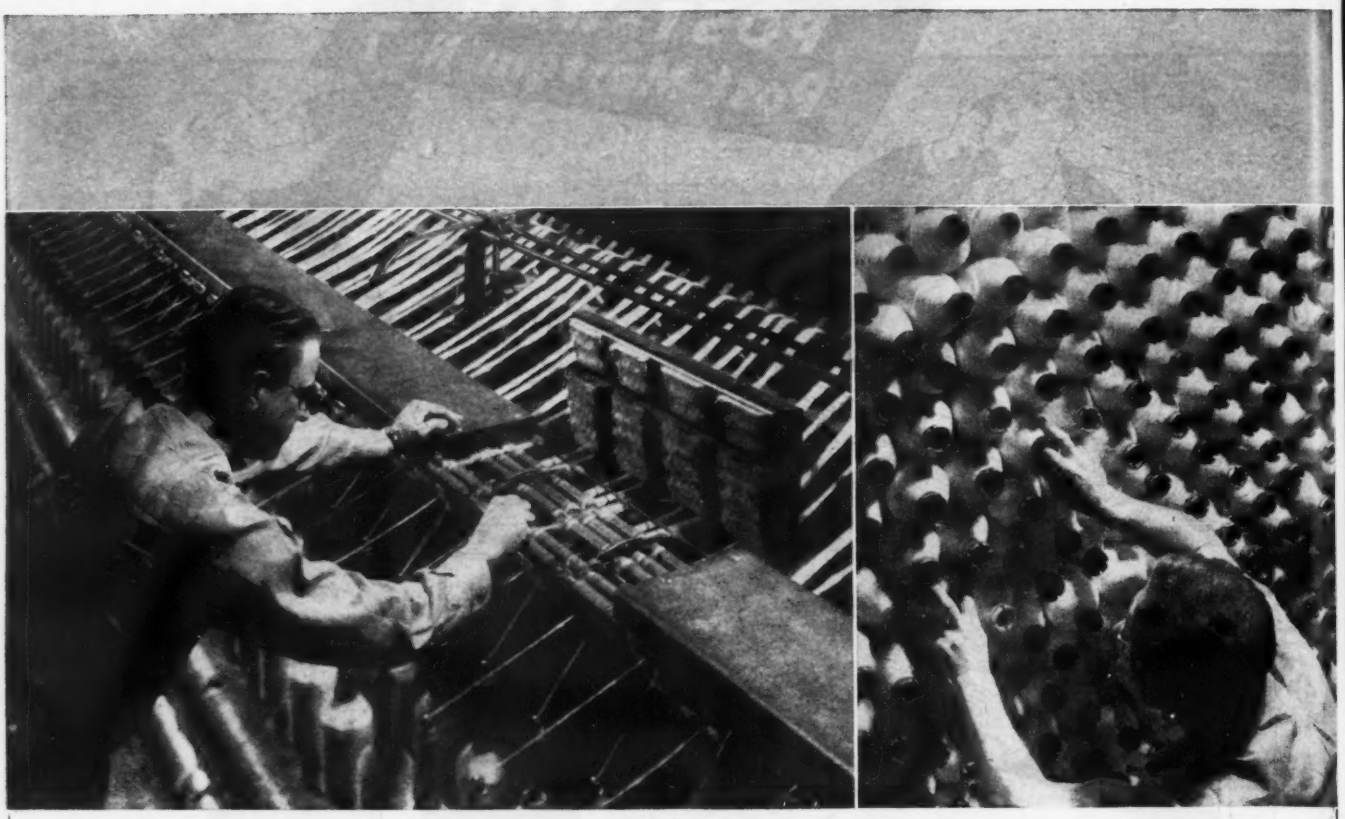
So don't be left "holding the bag" with worn-out, obsolete equipment that you can't replace. Decide *right now* what new machines you are going to need and *place your orders!* That goes for *all* types of machines . . . not just the types we make.

If you *are* going to need new dyeing or finishing machines, our "Post-War Purchase Plan" will be of great interest to you. A letter or a telephone call will bring you complete details, without the slightest obligation.

SMITH, DRUM & COMPANY
Allegheny Avenue at 5th Street, Philadelphia 33, Pa.

SMITH-DRUM TEXTILE MACHINES

for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.



Gulf Quality Lubricants in the card room help produce more poundage of good roving!

Here's a suggestion that may help you get more pounds of good roving and make dollar savings in maintenance costs: Put the spotlight on your lubrication! Make sure every machine is getting adequate protection —the right oil or grease for every specific requirement, plus the best method of application.

Call in a Gulf Service Engineer and let him work with your maintenance personnel to put your lubrication on the most efficient basis possible.

From Gulf's complete line, the Gulf Service Engineer will recommend a quality lubricant of the proper type and grade for each moving part. In many cases, he will also suggest better methods of application. This careful attention to lubrication will improve the performance of your machines and reduce maintenance costs.

The helpful counsel of a Gulf Lubrication Service Engineer—and the Gulf line of more than 400 quality oils and greases—are available to you in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

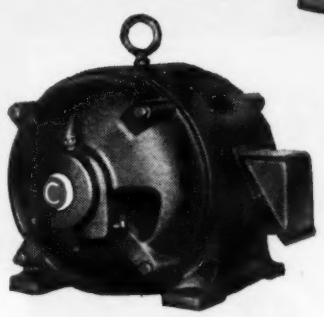
Gulf Oil Corporation · Gulf Refining Company · Gulf Building, Pittsburgh 30, Pa.

GULF INDUSTRIAL LUBRICATION

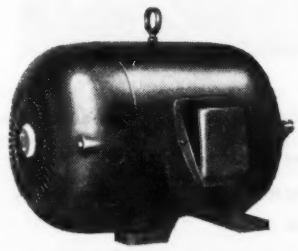
BACK THE INVASION...BUY MORE WAR BONDS!

Splash Proof Protection

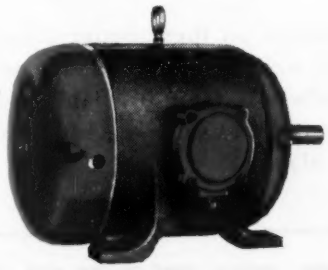
3 OTHER TYPES OF PROTECTION



Form J — General Purpose Application



TEFC — Protects Against Destructive Dust, Grit, Powdered Materials



Century Explosion Proof Motor

Where There Are Splashing Liquids

Guard Against Production Losses With CENTURY SPLASH PROOF MOTORS

Whether yours as an installation is subjected to splashing liquids — or whether your electric motors must withstand plant washdowns — Century Splash Proof motors will give you protection.

Of course, any falling solids are also kept out of the operating parts of the motor by Century's proven splash proof construction.

Special insulation is available for higher concentrations of acids and alkalies.

Wherever your electric motors must operate in conditions such as these, for safety's sake, specify Century Splash Proof. A Century engineer will be glad to give you complete details about the advantages of Century motors as they apply to your job.

Century C MOTORS

CENTURY ELECTRIC CO.
1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

384

IT'S IN THE "CARDS"

IT'S in the "cards" that split-second accuracy . . . perfect timing . . . is important. And on cards like this, timing is exact . . . for Baldwin Roller chain belts are on the job.

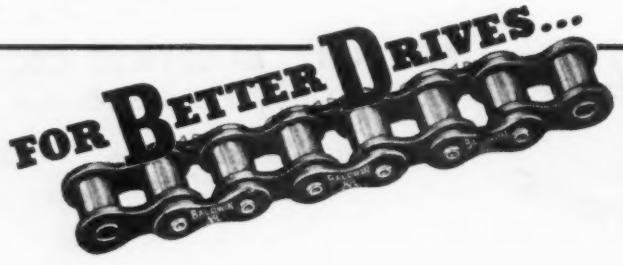
ASSURING positive, slip-free, jerk-free transmission of power, Baldwin Roller chain belts are real production helps. Because they transmit smooth, flowing power and absorb damaging shocks, waste due to uneven finished goods is eliminated . . . operating costs are reduced.

Baldwin drives can be installed easily on long or short centers . . . on cards, printing machines, twisting frames, finishing machines . . . in fact, on drives throughout your mill.

Baldwin Roller Chain Belts give you these advantages:

1. **Maintain constant speed ratios**
2. **No fire hazard from heat or static electricity**
3. **Low maintenance**
4. **Compact—require less space per h.p. transmitted**
5. **Quiet operation**
6. **Cleaner drives—do not gather dirt and dust**

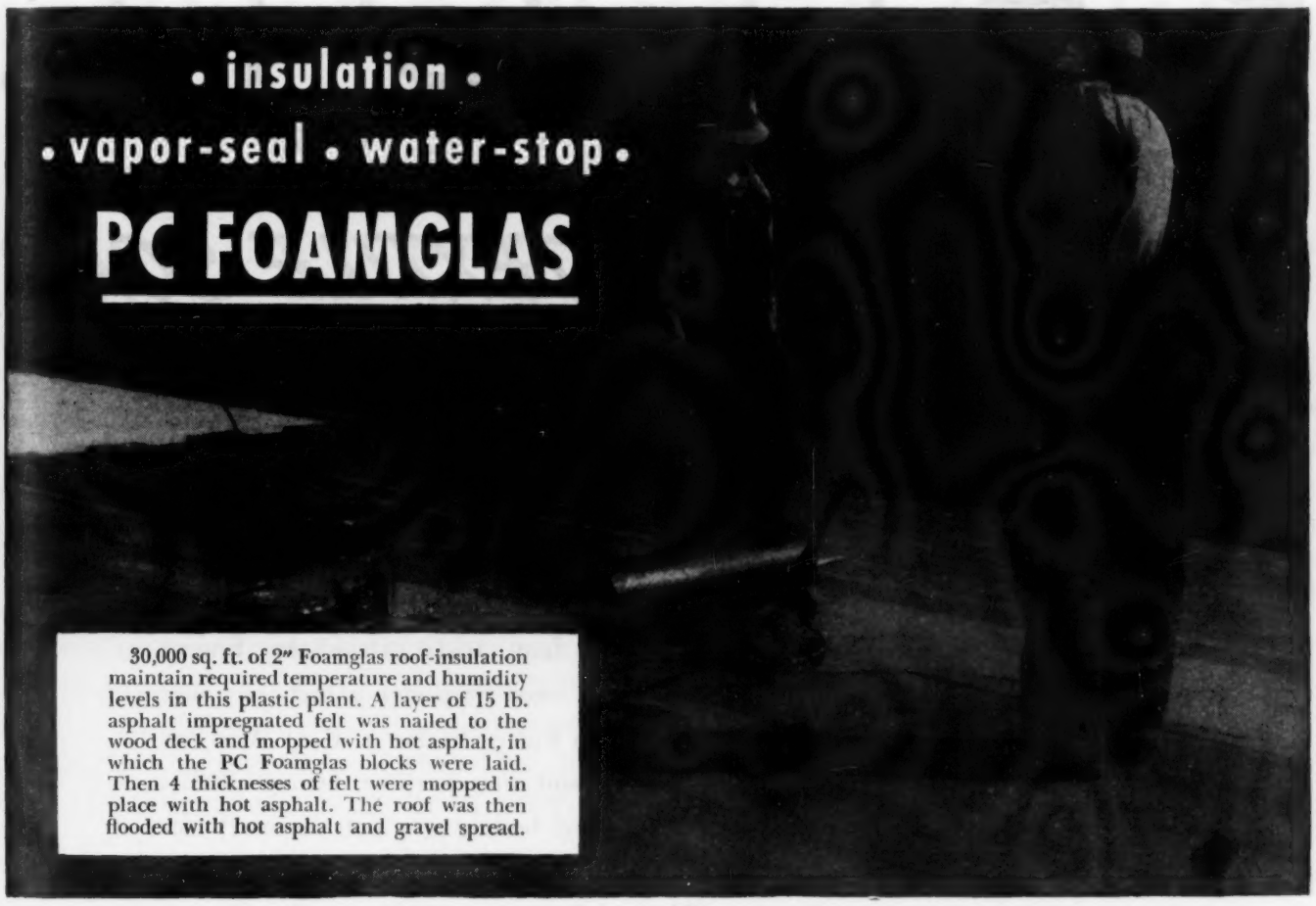
For complete information on these better drives and how they can help you, call your Baldwin man or write for your copy of Baldwin Catalog M. Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.



BALDWIN

ROLLER CHAIN BELTS

The roof insulation that does 3 jobs



30,000 sq. ft. of 2" Foamglas roof-insulation maintain required temperature and humidity levels in this plastic plant. A layer of 15 lb. asphalt impregnated felt was nailed to the wood deck and mopped with hot asphalt, in which the PC Foamglas blocks were laid. Then 4 thicknesses of felt were mopped in place with hot asphalt. The roof was then flooded with hot asphalt and gravel spread.

THIS new, permanent insulation for roofs is 9 parts air *hermetically sealed* in 1 part glass. Being glass, PC Foamglas is safe from attack by elements that cause deterioration in other insulating materials. Therefore, it retains its insulating efficiency throughout the life of the building it covers.

This cellular material is widely used as roof insulation in plants where it must withstand and control temperature, humidity and condensation in large working areas. PC Foamglas does not pack down, slip, swell, warp or rot, is not damaged by acid atmospheres, fumes or moisture. Non-combustible, vermin-proof, it is easily applied.

Supplied in 12 x 18 inch blocks, 2, 3, 4, 4½ and 6 inches thick, PC Foamglas comes in strong, easily handled packages. It can be cut to fit right on the job, with ordinary tools. It lasts *indefinitely*, without maintenance, repair or replacement, effecting important savings of time, trouble and money.

The unique qualities of Foamglas will enable you to operate your plant more efficiently—more economically. Our technical staff will be glad to consult with you, upon request, regarding all your needs for insulation. Meanwhile send for our free booklet which gives plant managers information they want about insulating roofs *permanently* with PC Foamglas. Pittsburgh Corning Corporation, 2209-4 Grant Building, Pittsburgh 19, Pa.

PC FOAMGLAS

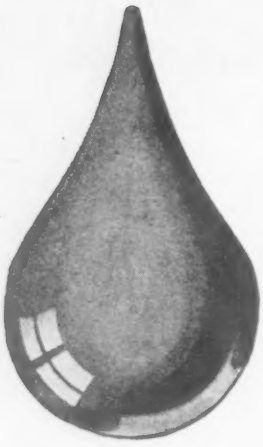
T. M. REG. U. S. PAT. OFF

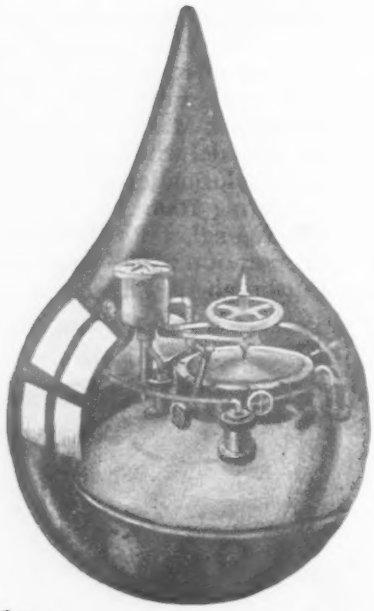
PERMANENT INSULATION

9 parts air hermetically sealed in 1 part glass

RED OIL

for all TEXTILE SOAP





Because soaps made from red oil (oleic acid) are readily free rinsing, they are ideal for all textile uses, scouring, fulling, etc.

Additional advantages are found in the wide selection of fatty acids offered by Emery. Whether you need or prefer a high or a low titre soap, an Emery Elaine or Fatty Acid can be found to suit your purpose. Strong alkalies and prolonged boiling are not necessary for complete saponification.

Where lubrication of the textile fibre is required, as in the processing of woolen and worsted fabrics, red oil serves a double purpose . . . good lubrication, as well as ease in scouring with mild alkalies.

Let us know your requirements because we would like to recommend a suitable grade and type for the best results at the greatest economy.

Emery's red oils, both distilled and saponified, can be shipped immediately in any quantity you need.

LABORATORY CONTROLLED THROUGHOUT PRODUCTION

EMERY INDUSTRIES · INC.

STEARIC ACID · OLEIC ACID · ANIMAL AND VEGETABLE FATTY ACIDS

4300 CAREW TOWER · CINCINNATI 2, OHIO

New York Office: 3002 Woolworth Building, New York City · New England Office: 187 Perry Street, Lowell, Mass.

THE NATIONAL DEBT—
and Your Postwar Job

Coming upon the heels of a ruinous ten-year depression, this war has once more made it clear to us that the strength of our country depends upon our ability and willingness to produce. Until the world conflict eclipsed the depression, we saw what failure to use our productive capacity can do — even to a country potentially as rich as ours.

The stark reality of war finally shocked us out of our economic lethargy. The necessity of supplying our Armed Forces with almost unlimited quantities of goods unleashed our inventive genius and revealed to us our real capacity to produce. It indicated what our standard of living might be if, in time of peace, we used our full productive capacity.

Today we are producing more than all the other nations combined, half again as much as in 1940. Today our production is insuring victory to our fighting men.

But what of the future?

Already our national debt has reached astronomical proportions, and it is going higher. The depression years' fear of insecurity that all but paralyzed our spirit of enterprise, our inventive genius, and our natural instinct for expansion, appears likely to return promptly if industrial activity again is curtailed for long because of unwise public policies.

This war is being fought to make men free. But our economy cannot be kept free through military conquest alone. There is another responsibility which we on the home front cannot avoid any more than we can build walls around our future. That is the problem created by our frightening public debt.

This is a two hundred billion dollar war. It affects the lives of every one of us. At the end of this war, the public debt of the United States will be at least ten times the twenty-five billion dollars that it was at the end of the first World War. It will be almost twice the present annual national income of the country. The interest charge alone will be about 4 per cent of the national income. If the burden were spread evenly, interest alone would take at least $80.00 of every worker's income per year, or approximately $1.60 out of each and every weekly pay check.

Some people fear that the heavy taxes required by the debt will keep the country poor by obstructing employment and limiting the output of goods.

Others believe that the size of the debt does not matter because we owe it to ourselves. They reason that if A is taxed $100 to pay $100 interest to B, A has $100 less to spend and B has $100 more, but both together have the same amount. They, therefore, hold that the demand for goods and the volume of employment remain unchanged.

Which view is correct?

Is our huge debt bound to be a crushing burden which limits employment and lowers the nation's standard of living, or will it simply redistribute income? May the public debt under certain conditions even be used to help increase employment and raise our living standards?

There are two other reasons why reduction of the debt will be desirable.

In the first place, it will help prepare the country financially for a possible third World War. Determined as we are that this war shall be the last one, common sense tells us not to count on this. At any rate, we must be prepared for any eventuality.

In the second place, gradual reduction of the debt would stimulate employment by creating the expectation of lower taxes. It is not generally appreciated how much the willingness of individuals and business concerns to spend money is affected by the prospects of higher or lower taxes. One of the best ways to make individuals and enterprises spend more freely is to convince them that taxes will become a little lower, year by year.

Many people have difficulty in visualizing the day when there will be a substantial reduction in the burden of the national debt. And yet, if the country pursues wise economic policies, there is no reason why the debt burden should not be cut in half during the next generation.

The days of technological progress and economic expansion are not over. They are, in fact, only well begun. During the Twenties, the national income in dollars of constant purchasing power increased by well over 50 per cent. Between 1929 and 1939, it increased by less than 6 per cent. Perhaps the rate of the Twenties cannot be maintained indefinitely; but scientific research and development work in industry are laying the foundation for very large advances in national income. Suppose that the national income increases 33 per cent in the first decade after fighting stops (say, hopefully, 1945), 25 per cent in the next decade, and thereafter at the rate of 20 per cent a decade. In 1955, the national income (at present prices) would be about $173 billion; in 1965, about $216 billion; and in 1975, about $257 billion. By 1970, the burden of the debt would be reduced by nearly half, even if not a cent of it were repaid!

A huge public debt is a test of the character, the common sense, the foresight, and the equally important technical and engineering skill of a nation. ***It requires that tens of millions of small income earners be willing to become substantial holders of the debt. It requires that the nation be willing to tax itself heavily, but in ways which increase the attractiveness of job-giving or self-employment relative to job-holding; it requires that the nation be willing to pursue policies of expansion and to put a rising income for the nation ahead of the pleas of self-seeking groups in labor, agriculture, and industry.***

A huge debt may so draw out the hidden powers of a people that it makes the nation wealthier rather than poorer, stronger rather than weaker.

Up to now, Americans have not met the test of a big public debt too well. Individuals have saved more in cash than in government bonds, and the country has shown little interest in avoiding the kind of taxes that reduce the demand for labor. These shortcomings, I am sure, stem largely from the fact that the American people never have had the problems of debt and taxation honestly and adequately explained to them.

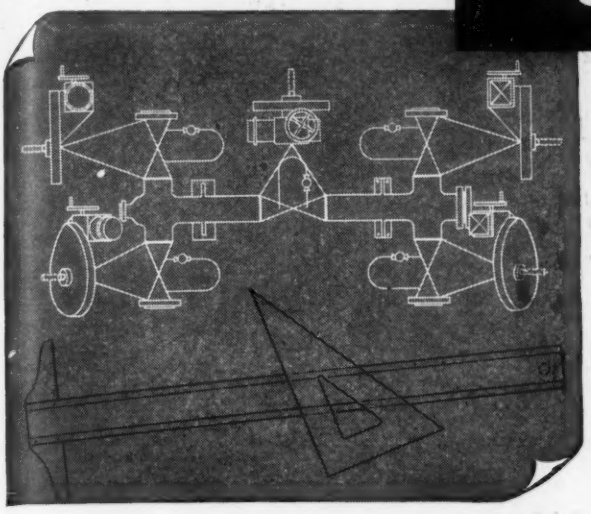
I have confidence in the American people. I believe that Americans have the intelligence to understand this problem of the public debt, the character to face their responsibility regarding it, and the common sense to accept the challenge and make the most of it.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Company, Inc.

Shop-Fabricated Assemblies . . A Complete Service from CRANE

1. ON THE DRAWING BOARD — *No matter how complex your piping assembly design may be, all parts—valves, fittings, and pipe—are supplied by Crane. One source of supply—one order covers everything.*



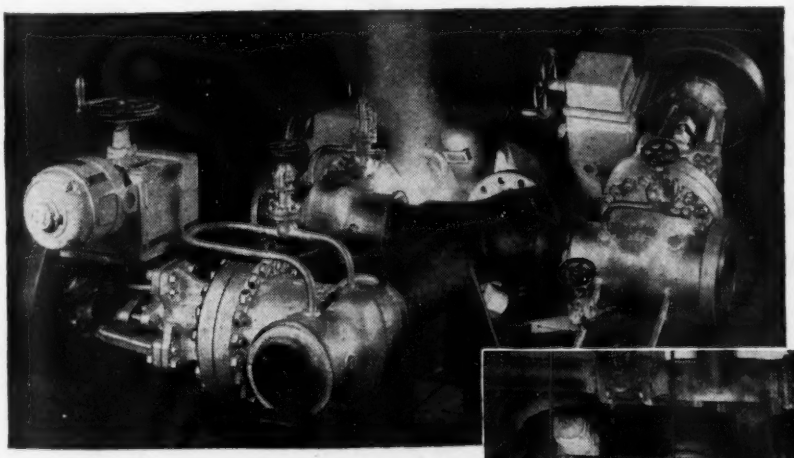
SHOP-FABRICATION typifies Crane complete service in the highest degree. Your blueprint in Crane Pipe Shops means delivery to your installation of a unit meeting every intent of design. For at Crane, no job is too small—none too large or complex—and absolute adherence to specifications is a matter of pride.

As the world's leading supplier of valves, fittings, and fabricated piping, Crane Co. produces all types of header assemblies of valves and fittings. Completely shop-welded, stress-relieved and tested, and conforming fully to code requirements, such Crane-built units—whether for power or processing systems, high or low pressure—stand out as the finest combinations of materials and workmanship.

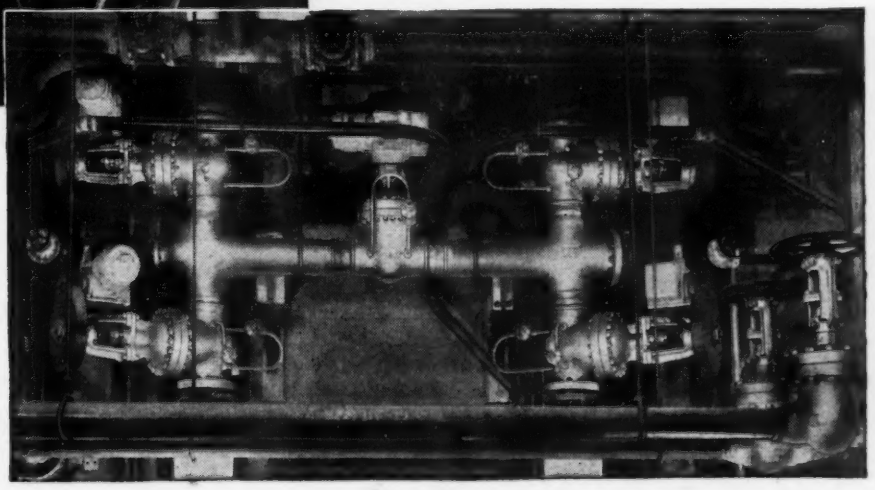
The same rigid control applied in making Crane valves and fittings marks every pipe shop operation. From raw materials to finished assemblies, one high standard of quality is maintained by the most elaborate facilities in the industry. Your complete satisfaction with every job is assured by Crane Co.'s 89-year leadership in the piping equipment field.

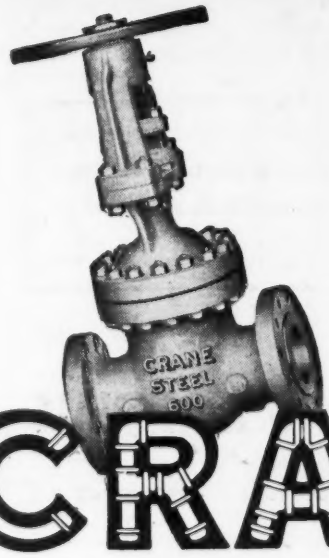
Crane Co., General Offices: 836 S. Michigan Ave., Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas.*

2. IN THE FABRICATING SHOP — *All designs are completely fabricated by Crane. Proper selection of all parts is assured by the complete Crane line. One responsibility covers all materials and workmanship.*



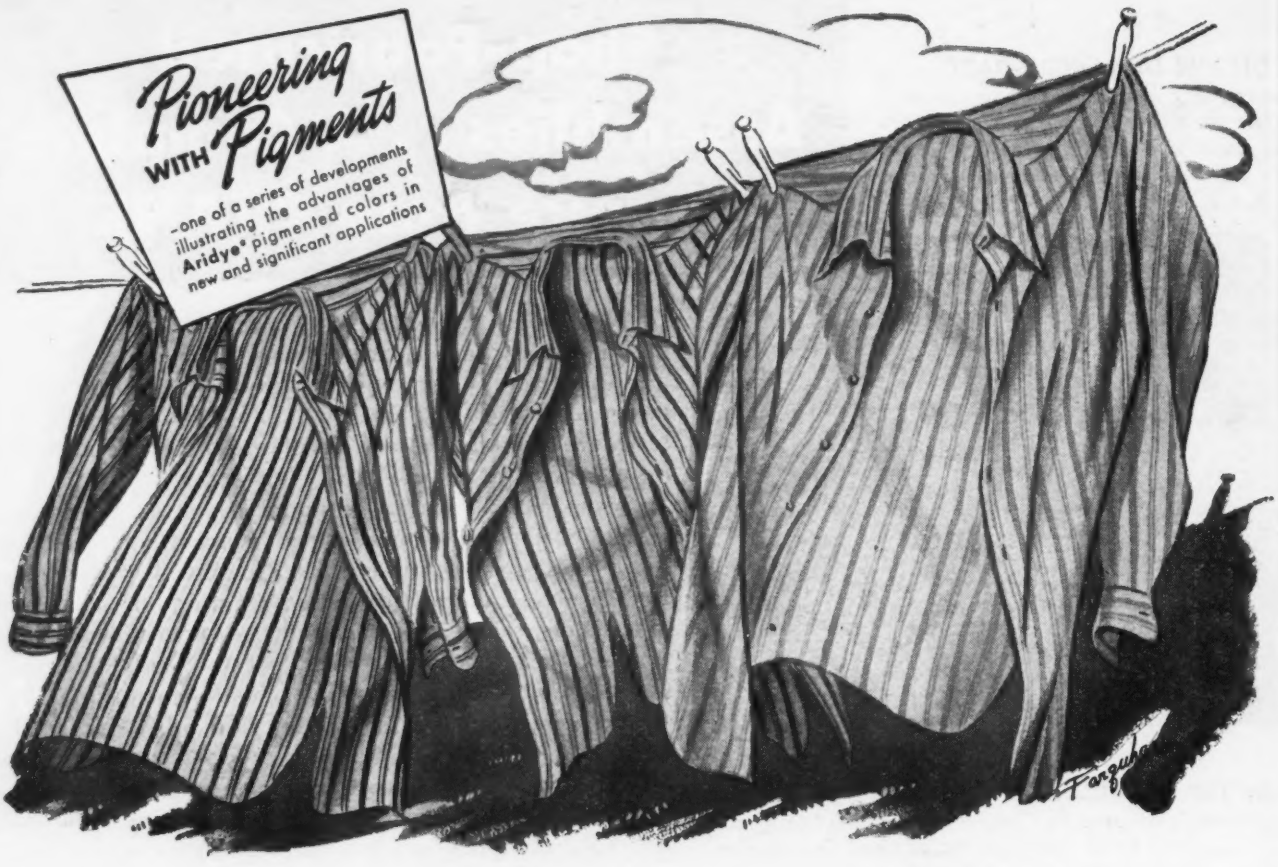
3. ON THE JOB—*With Crane materials and Crane craftsmanship in every part, one standard of quality guards the entire assembly. Shown is the completed 12 x 8 x 4 in. header assembly of 600-pound cast steel motor-operated gate valves and fittings, installed in a central station.*





CRANE

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS


Pioneering WITH Pigments
-one of a series of developments illustrating the advantages of Aridye* pigmented colors in new and significant applications

Full Shade or Light Tints

EVEN WHEN REDUCED TO TINTS, SELECTED ARIDYE COLORS HAVE *EXTREME LIGHT FASTNESS*

Light fastness is one of the outstanding advantages of Aridye pigment-printing colors. Most pigments are reasonably lightfast. For those uses where light fastness is *extremely* important, certain Aridye colors may be selected which, even in light tints, will withstand 300 fadeometer hours without let down!

In wash fastness, Aridye colors meet or exceed accepted standards of the textile industry. By careful selection of technically correct pigments and binders, Aridye colors have been formulated to bond with textile fibers so firmly that they pass the most severe Launderometer and scrub tests.

Application problems are simplified by the use of Aridye colors. Matching is easier and quicker because the colorist is working with fully developed colors; and, because Aridye colors wet quickly both fibers and the metal of the engraving, they assure a sharp, uniform mark that is an *exact* reproduction of the engraving.

A wide range of Aridye colors can be supplied under M-103. In addition, 13 extremely lightfast Aridye colors are still available without any restrictions. For complete information about Aridye pigment-printing colors and the advantages they offer you, write today to Aridye Corporation, a subsidiary of Interchemical Corporation, Fair Lawn, New Jersey.

NOT 1, NOT 2, BUT 3 CONDITIONS Govern The Bond Between Fabric Fiber and Pigment

1. Technically correct pigment colors
2. Proper application to the fibers
3. Adequate curing of the fabric

No Shortcut Procedure Can Produce A Satisfactory Bond

*Reg. U. S. Pat. Off.

Aridye TEXTILE COLORING MATERIALS

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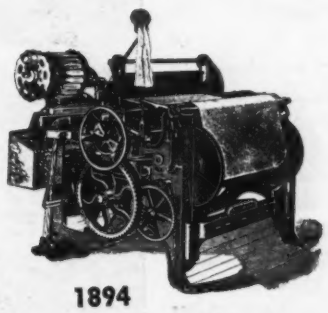
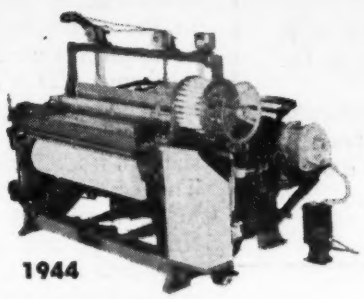
50 YEARS OF PROGRESS IN AUTOMATIC WEAVING



1894



1944

HIGHLIGHTS: First Installation of Automatic Bobbin-Changing Loom Made in August, 1894, at Queen City Mfg. Co.— Many Changes Since in Original Single-Shuttle Northrop Loom.

By C. W. BENDIGO
Assistant Editor, TEXTILE WORLD

FIFTY YEARS AGO this month there was delivered to Queen City Mfg. Co., in Burlington, Vt., the first of an order of 792 Northrop automatic bobbin-changing looms. This was the first commercial installation of automatic looms in the world. Automatic weaving was the product of American inventive genius protected and encouraged by our patent system. Since then, weaving mechanism has been far from static, as is shown in the following pages in which the progress of various elements of the loom during the last fifty years is traced pictorially.

Automatic weaving, a term which connotes automatic replenishment of the filling supply, was not an idea that was thought out suddenly and developed at once. No basic patent was ever granted covering it. There is considerable controversy as to when the first experimental automatic loom was built, but certainly it was many years before the Queen City installation. It was probably of the shuttle-changing type, which was not made practical until after the bobbin-changing principle had been accepted.

NORTHROP LOOM. The first bobbin-changing loom was called the Northrop loom, after James H. Northrop, who first conceived the bobbin-changing principle. Many other men, however, were involved in its development, including William F. Draper, George Otis Draper, A. E. Rhoades, J. C. Brooks, Charles F. Roper, Oberlin Smith, Edward Smith, and J. W. Keeley. Originally Northrop held a greater number of patents on the loom than any other inventor—41 of the first 127.

Before the first automatic was produced, cloth quality was very poor as judged by today's standards. For example, a broken pick or two picks in one shed were expected, and it was common practice not to repair a warp thread until the loom was stopped to change the filling bobbin. Heavy marks and light marks were prevalent in all types of cloth, since cast gears were used throughout the loom.

Automatic weaving introduced improvements in many parts of the loom which were not directly related to the problem of replenishing filling. This was because the automatic principle sought to take the weaver away from the loom for long intervals, and it was important that the machine behave properly in his absence. An outstanding example of this related progress was, of course, the invention of the warp stop motion, without which automatic weaving would have been quite impossible.

And so it may be seen that the commercial development of the automatic loom was in true fact a revolutionary

JAMES HENRY NORTHROP

Jimmy Northrop, for whom the first bobbin-changing automatic loom was named, was a native of England, having been born on May 8, 1856, in Keighley. He came to America at the age of 25 and first showed his ability as an inventor by developing the Northrop spooler guide. It is not known definitely just when he first started work on the automatic loom, but he had a shuttle-changing loom in operation in October, 1889. According to old records, in 1891 he introduced the idea of changing the filling package rather than the shuttle; but it was not until three years later that the first looms of this type were marketed.

It is interesting to note that by 1898 Northrop had about a hundred patents to his credit. He retired from active life that year at the age of 42.

The picture of Mr. Northrop shown here was made for TEXTILE WORLD during his visit to a textile exposition in Greenville, S. C., in 1935.

The second half of his 84 years Jimmy Northrop spent in California. He lived to see the loom which bore his name become world-famous, and to see automatic looms that undoubtedly far exceeded his dreams of a half-century ago.

milestone in the history of weaving.

Automatic weaving on multi-shuttle types of looms has been developed to a high point by the Crompton & Knowles Loom Works, of Worcester, Mass.; while the late Stafford Co., of Readville, Mass., was responsible for much of the progress in shuttle-changing types. However, as an example to illustrate the progress which has been made generally in automatic weaving over the past fifty years, we have selected the single-shuttle bobbin-changing loom, built by Draper Corp., Hopedale, Mass., which was, and still is, the Northrop type. Even with the discussion confined to this one loom, however, it will be impossible to record all the developments of 50 years in the space available. Also, it would be almost impossible to illustrate pictorially some of the improvements which were effected by the machining of parts and the substitution of cut gears for cast gears. Nevertheless, the following pictorial presentation serves to show some of the highlights of the first half-century of automatic weaving.

EARLY RECOGNITION. Unlike many new inventions which are ignored at the start, the Northrop loom was heralded from its beginning as a great step forward. Early in 1895, TEXTILE WORLD gave very considerable space to the new loom and presented the woodcut which is reproduced on the preceding page. By January, 1897, TEXTILE WORLD started a series of technical articles on the fixing of the Northrop loom. In September, 1897, it made the observation that the 28-in. Northrop looms at Pacific Mills were running at 92% efficiency and that weavers were operating 16 looms, while fixers attended 110. By 1899, it appears that the maximum number of looms per weaver, due to the improved automatic features, was 32. Even this, however, was a far cry from the 120 which some weavers operate today.

The early looms were largely foundry jobs and were often sold on much the same basis as castings. Near the end of last century, a typical 40-in. non-automatic loom could be bought for $45 to $55, which is not very much considering that such a loom would weigh from 900 to 1,200 lb. However, it was proven then, just as it is today, that textile mills are willing to pay higher prices when the expense can be justified by the results, as the automatic Northrop loom sold for two and three times the price of the non-automatic loom.

The first loom produced, which was called in the early days both Model A and the 1894 Model, was quickly superseded by Models B, C, and D, a fact which indicates that the early loom, in spite of all the development work done on it, was, like most new products, only the start. But by 1898, the Model E Draper loom became a basic type and was built by the Draper Corp. for the next 30 years. This does not mean that the model was frozen, except basically. Constant changes and improvements were made, as the following pages show. The thought was, however, that all changes could be applied to that model and thus early installations could be brought constantly up to date.

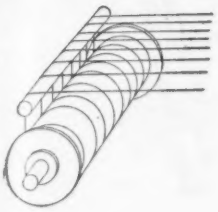
INTENSE RESEARCH. The 50th anniversary of the first commercial installation of automatic looms comes during a period of intense research and development in production machinery. In the earlier days, most machinery developments were made by inventor-mechanics. This is quite in contrast to modern developments, which often are carried on by several interrelated staffs all working on the same problem. The early inventors had nothing to help them that compares to the stroboscope and other electronic devices such as are used, for example, in the Draper research and development laboratories today. At Hopedale, in addition to development and research laboratories, the Draper Corp. also has chemical and metallurgical laboratories, both for quality control and for development work.

The stroboscope has radically affected the settings of looms, since it has shown that settings based on a manual turning-over of the mechanism are inaccurate. The kinetic forces are important, and they can be studied by means of stroboscopic flashes.

It is to the credit of American manufacturers that no European or other foreign looms have ever competed with American types to any serious extent. On the contrary, it appears that the foreign demand for American looms will be greater in the near future than ever before. Some of this demand, of course, will be due to postwar economic conditions.

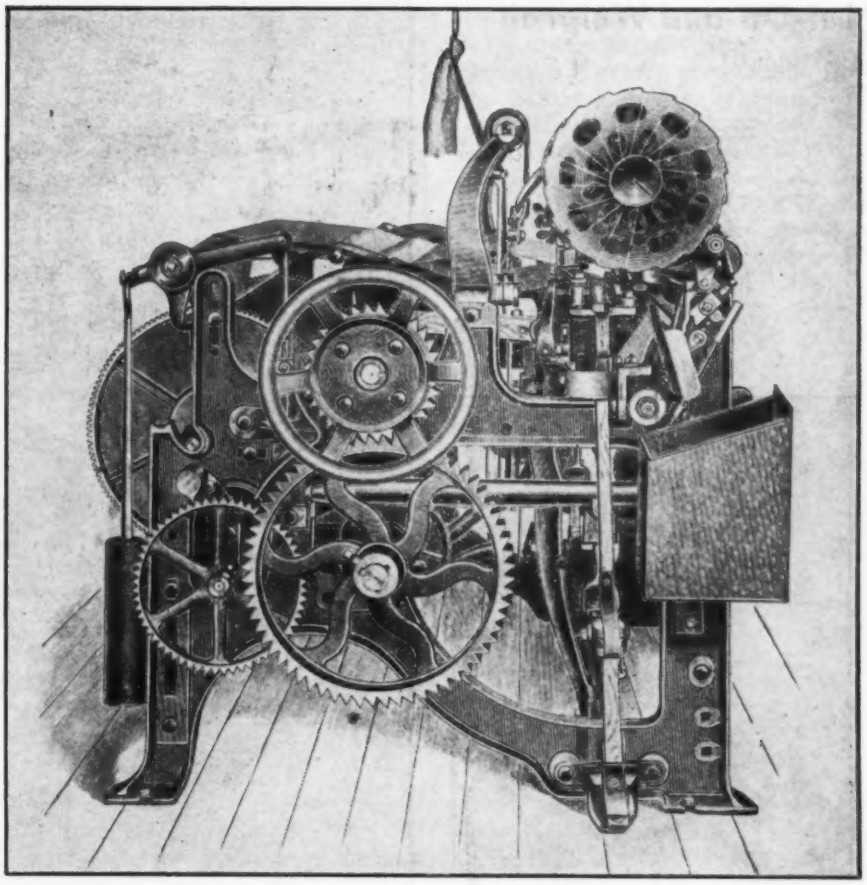
That there will be continued improvements in weaving mechanisms cannot be denied any more than it can be denied that there were improvements in the past. In a like manner, just what form they will take can be predicted no more accurately than they could have been by Jimmy Northrop in 1894.

Let-Off and Whiproll

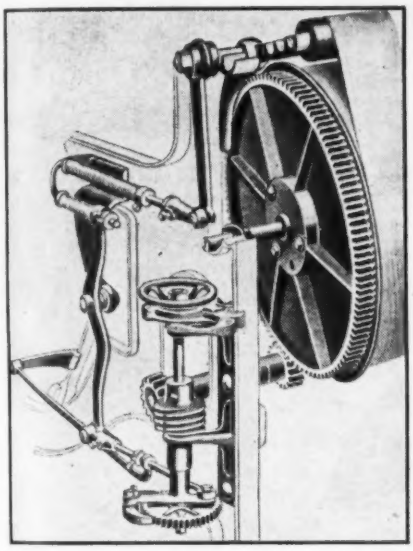


THE views here show the inter-relation of let-off device and whiproll. All these let-offs, even before the short-lived old Shepard, operated by pressure from the whiproll.

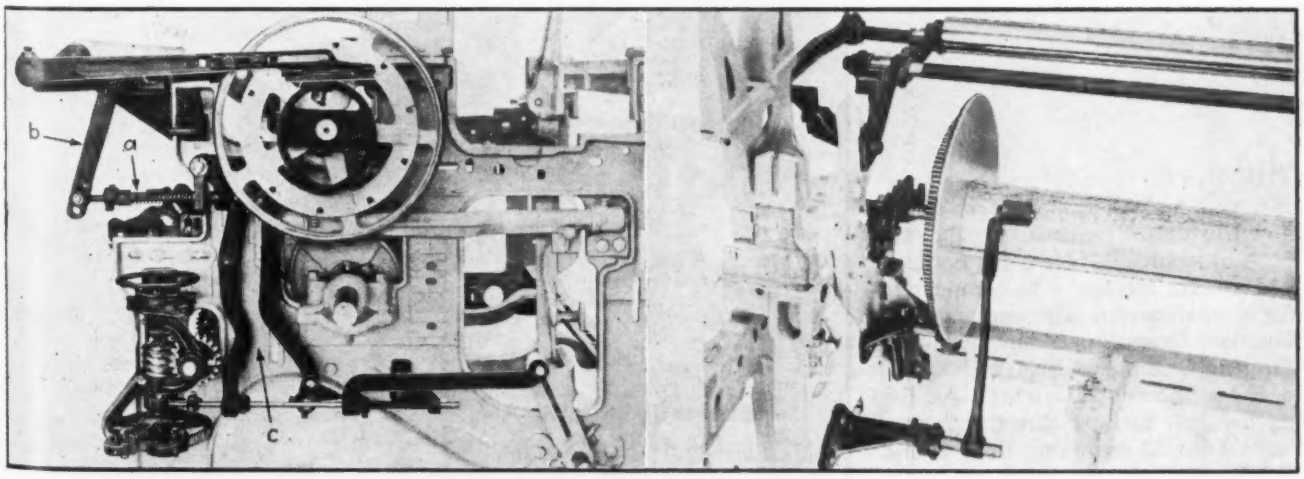
Looms are operated both with and without the vibrating whiproll such as is shown on the view of the latest Bartlett. The vibrating whiproll is designed to reduce the strain on the yarn when the shed is open.



THE WARP let-off motion shown in this old wood cut of one of the earliest Northrop automatic looms (1894) was known as the Shepard. It operated by pressure on the whiproll but was soon superseded by the Bartlett motion. This view was published in TEXTILE WORLD in May, 1895.



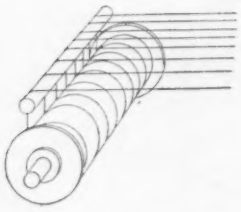
BY 1897 this "improved Bartlett" or "Snell and Bartlett" let-off (at left) took the place of the Shepard. The original of the series of Bartlett let-offs was first used about 1857 and thus antidated the automatic loom, but this "improved" model was developed for the automatic. The model shown was the first to have a friction clasp adjustable by hand (just under the handwheel).

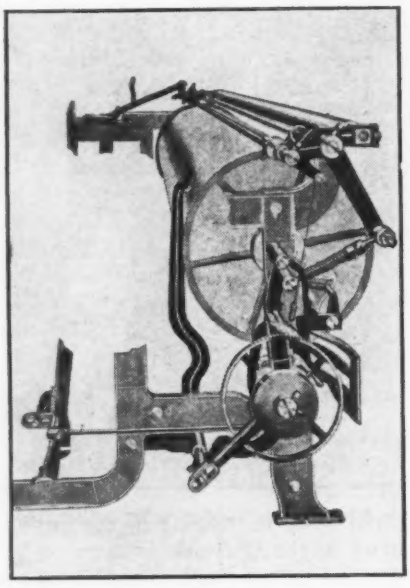


THE RIGHT-HAND photograph, which shows the latest automatic Bartlett let-off, illustrates the feature that has made it fully automatic. It is the beam follower. It operates through levers against the vibrator rod spring at *a* to compensate for the reduction in beam diameter as the yarn is run off. Pressure of the warp on the whiproll actuates the arm *b* so that the lever *c* moves the ratchet gear. The dogs shown on the ratchet are designed to give control to ¼ of a tooth. Movement here is transmitted through the spiral and worm gears to the loom beam. The cam-operated vibrating whiproll shown in the left-hand picture represents the latest development.

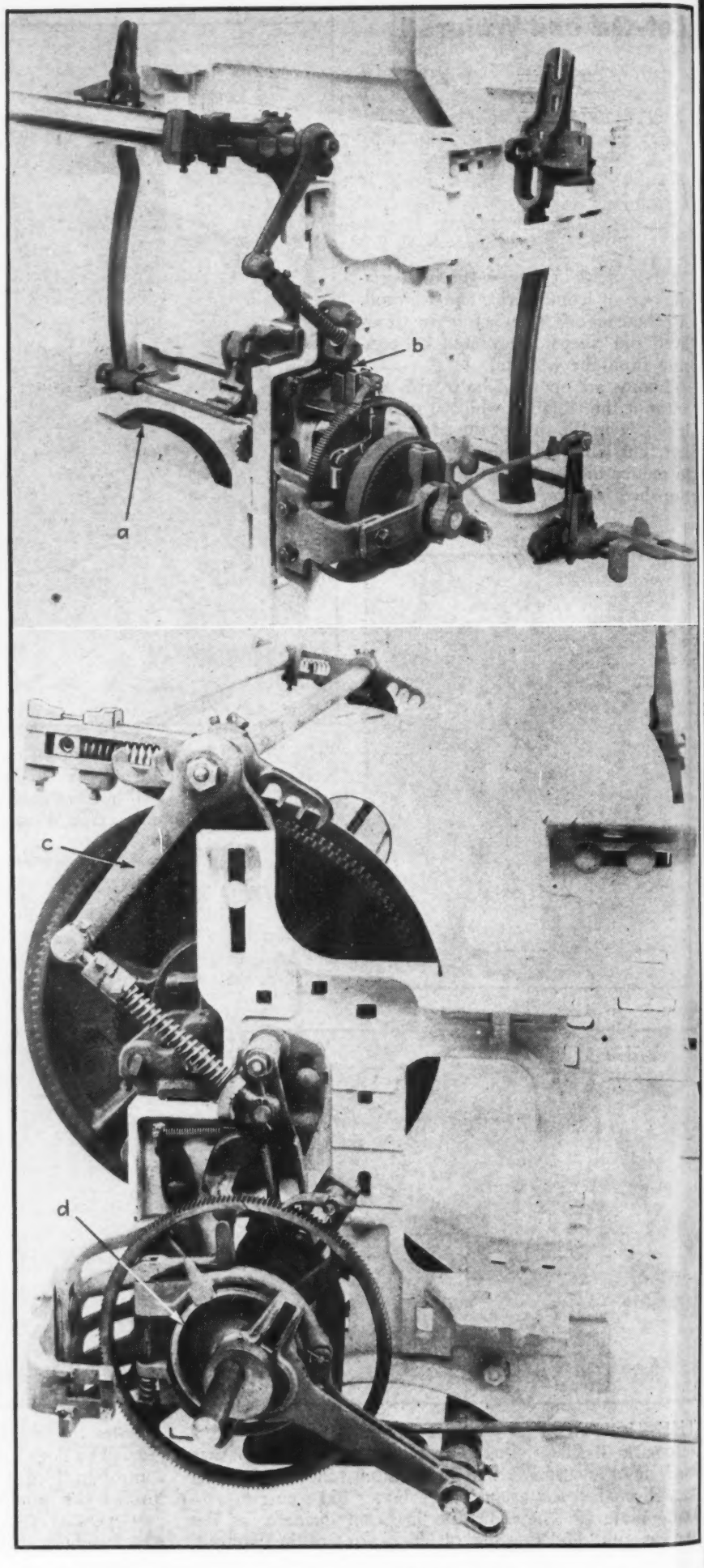
Let-Off and Whiproll

(Continued)



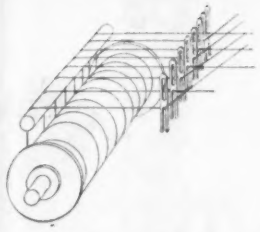


AT ABOUT the turn of the century this Draper-Roper let-off was applied to the Northrop loom. This was one of the first to use a beam follower to compensate for the ever-reducing diameter of the warp and the corresponding need for increasing the let-off. This was the forerunner of the present Roper let-off.



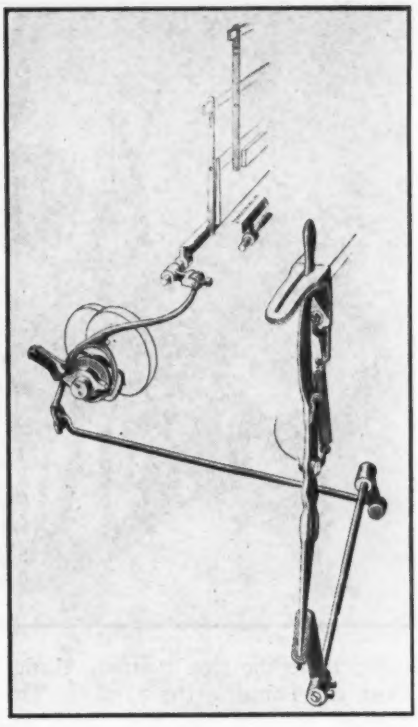
THE UPPER VIEW (right) of the spur-gear type of Roper let-off shows how this device is currently being applied to looms. It, before the Bartlett, had a beam follower a to compensate for beam diameter. This compensator, however, compensates by changing the length of the leverage at b which operates the let-off ratchet. As the ratchet gear turns, a direct spur gear lets off the loom beam. Both it and the Bartlett are actuated by the pressure of the warp yarn on the whiproll. The lower view shows the connection c between the compensator and whiproll levers. It also shows the friction d which permits the warp to let off if under undue stress.

Warp Stop Motion

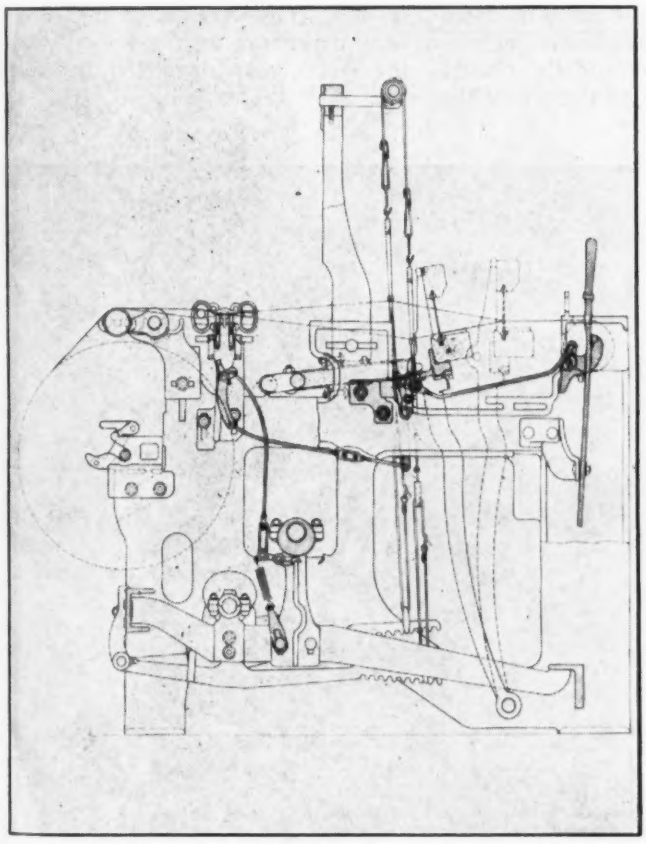


WHEN one thinks of an automatic loom as contrasted to a non-automatic the filling-replenishing mechanism normally comes to mind first. But, to make a truly automatic loom, stop motions and protection motions are also needed. It is claimed that, after Northrop developed his bobbin changing mechanism, the production of the automatic loom was retarded because of inadequate stop motions.

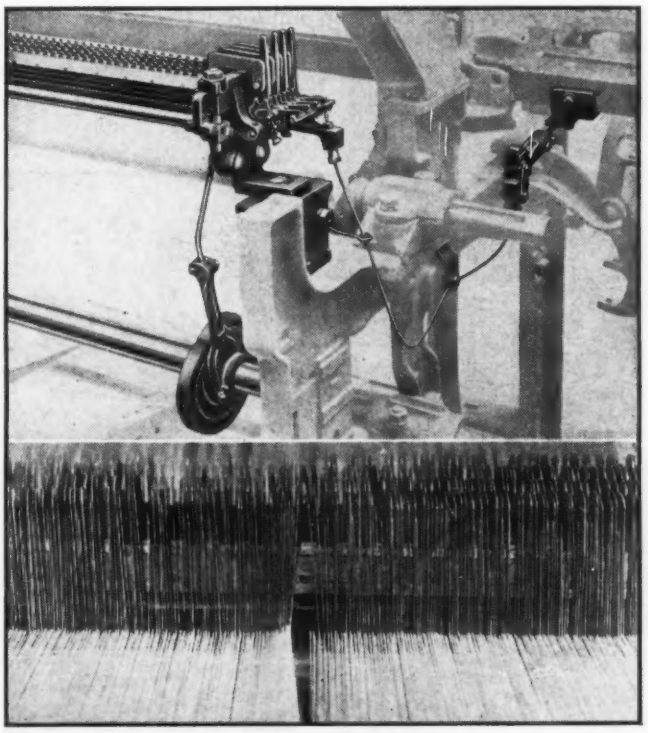
It is interesting to note that of 127 patents taken out by Nov. 1, 1897, in the development of the automatic loom, 40 were for warp stop motions.



THE STOP MOTION on the original Northrop automatic loom of 1894 combined the warp stop motion with the harness. It was known as the "steel-harness warp stop motion." The lower of the two drop-wires shown is in position to stop the loom. If there were an unbroken thread in it, the thread would rest on top of the bar to the right of the drop-wire and would hold up the drop-wire. This stop motion was actuated by a broken end only when it was on the bottom of the shed. The toothed bar normally rocked forward and backward. When a drop wire got in its way, the rocker arm was held away from its cam while one of the knock-off teeth struck the dog and, through leverage, forced the shipper handle out of its notch. This stop motion was favored since it would eliminate the necessity for an extra drawing-in operation. However, this motion was not suitable for weaves requiring more than two harnesses and was soon replaced by various types of drop-wires.

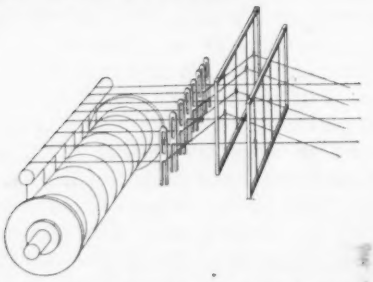


AN INTERMEDIATE warp stop motion is this model which was put in use about 1910. This motion was more complicated than the steel-harness type (or the modern). Stop motions that used banks of drop-wires separate from the harness motion were first employed about 1898. Drop-wires suspended on opposite sides of a lease fall into the path of the rocker bar, holding rocker arm away from its cam and permitting the knock-off finger to be struck by the lay, thus forcing the shipper out of its notch.

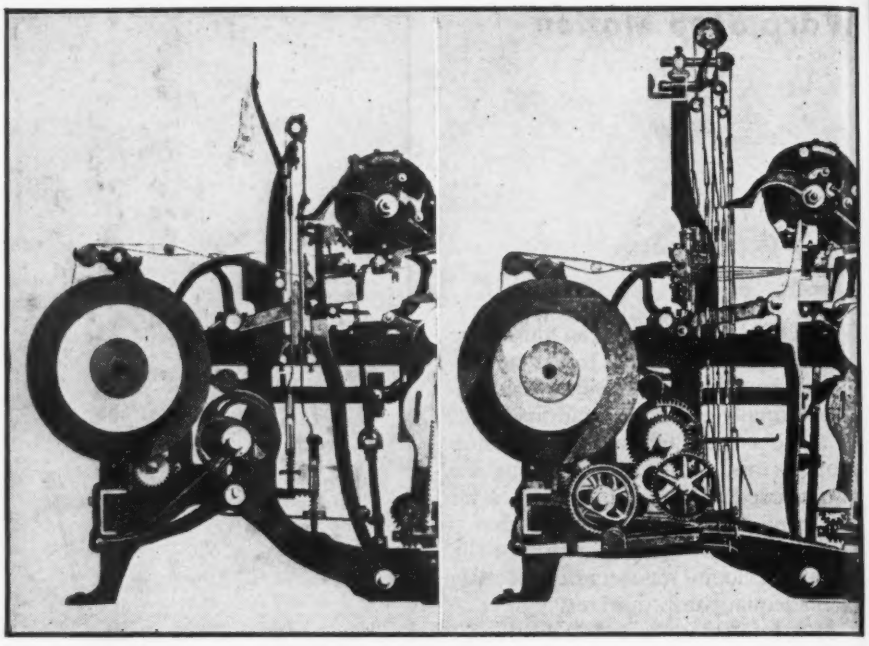


COMPARE THIS latest sliding-bar mechanical warp stop motion with its forerunners. A serrated sliding bar is racked back and forth longitudinally between two serrated stationary bars by means of an oscillator cam. When a drop wire falls between serrations and prevents a sliding bar from pushing down a short plunger in a flexible tubing, the knock-off finger remains in the path of the knock-off bunter on the lay, is struck, and releases the shipper handle. The lower view shows how a broken end is indicated by an opening of the sheet of yarn. This is accomplished by having the teeth of the sliding bar at an angle. When a fallen drop-wire is jammed between the sliding bars, the drop-wire is forced out of parallel.

Harness Motion

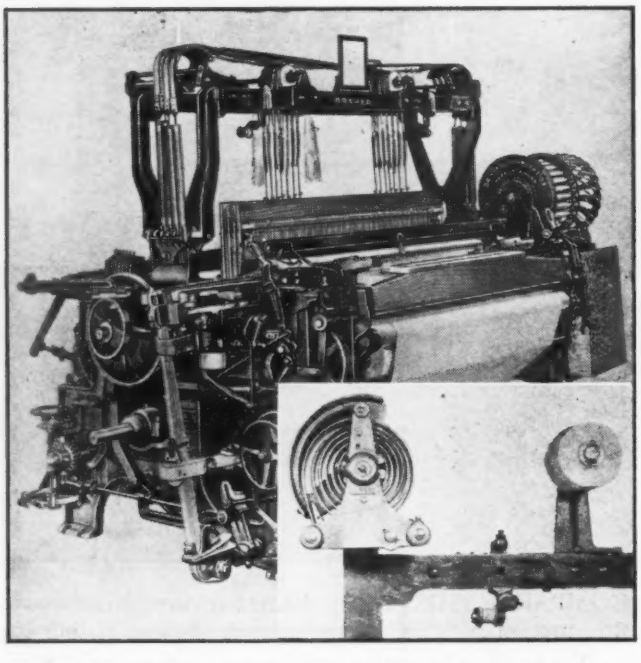


THE views here indicate the scope of developments in the harness motion. Only a few highlights are given. Most of the developments are a result of the needs arising from multiple-harness weaving. Numerous other actuating motions and tops have been developed. No attempt is made to portray the more elaborate harness motions as they were developed independently of automatic weaving.

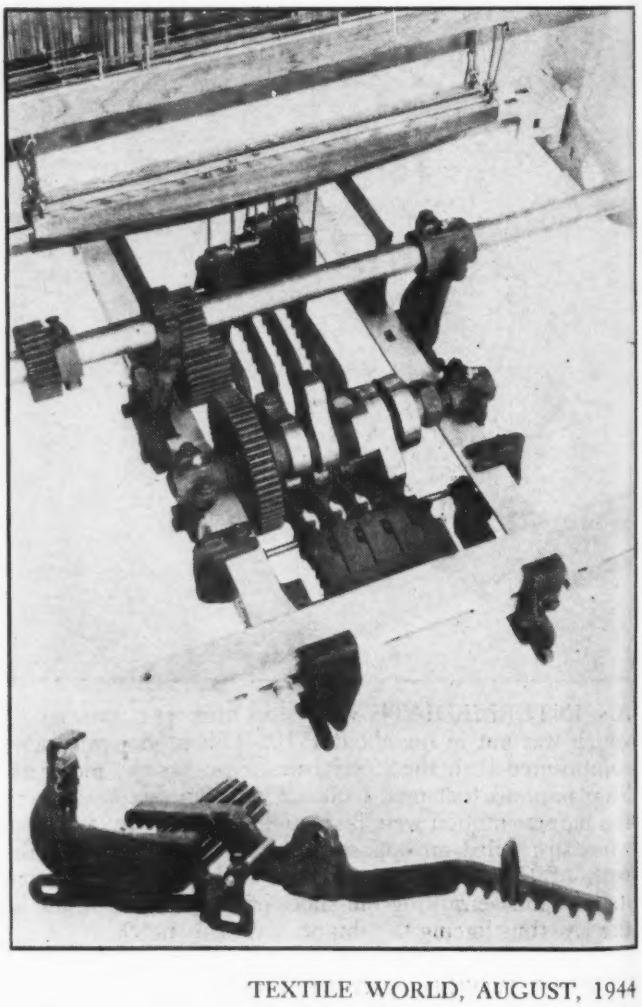


EARLY SKETCH (right) shows the harness motion that was used in the original Northrop. The view is a cross-section of the loom a short distance inside the left loom stand. The harness shown is also the stop motion. Between the two harness frames can be seen the bar that holds up unbroken threads so that the heddles do not actuate the stop motion. Underloom cams actuate the harness. This harness motion has the "roll and shaft" top.

Fancy weaves on the automatic loom brought a multiple-harness motion. Note the cam roller and the change in shape of the cam on the side of the gear. This harness did not incorporate the warp stop motion, which can be seen just left of the harness frames. Illustrated is a cotton harness with 1898 warp stop motions. With it, two or more ends were drawn in a drop-wire, depending on the weave. Note the more complicated top necessary with multiple harness.

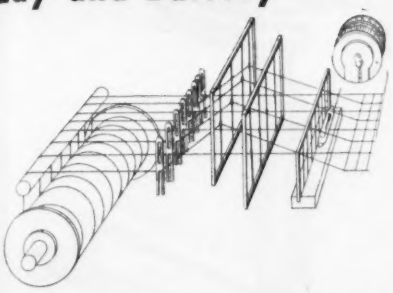


SHOWN ABOVE in the insert is the latest clock-spring development of the spring-top. It replaces the coil springs heretofore used to hold up the harnesses when released by the cams.

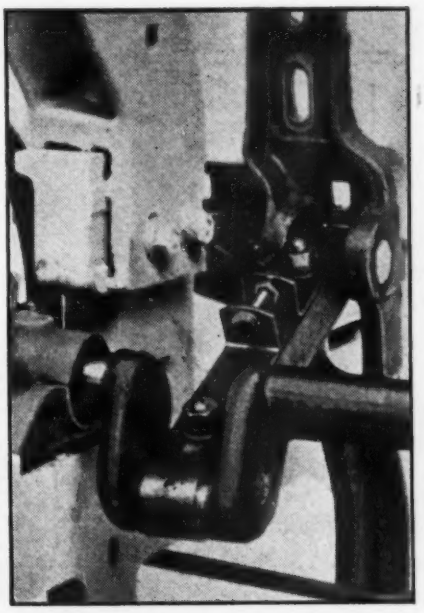


THE ADJUSTABLE TREADLE shown in the bottom portion of photograph on right represents a late development in the harness motion. By moving the treadle gear in or out, the opening of the shed is decreased or increased.

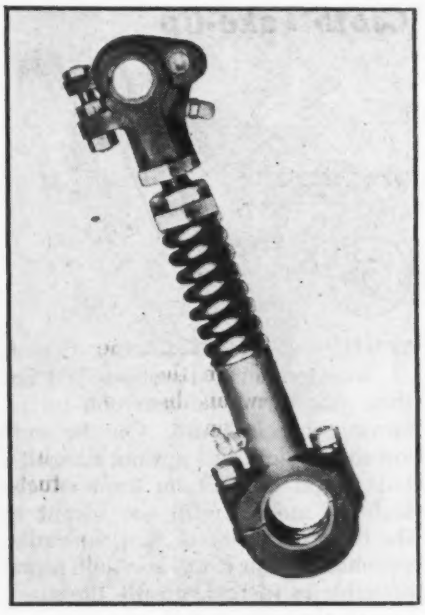
Lay and Battery



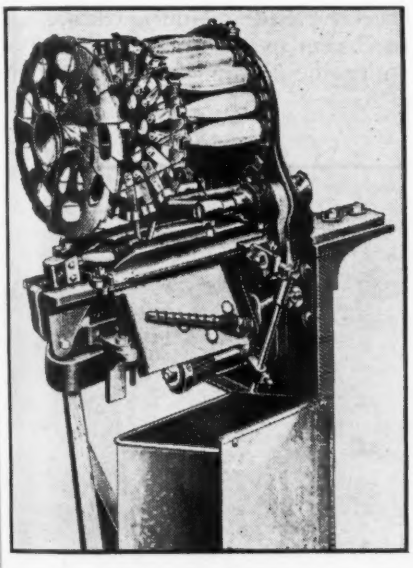
THE bobbin transfer originally occurred when the lay was back and the shed open. This was changed so that the transfer occurred when the lay was forward, to give more time to prevent a transfer if the shuttle did not box properly. Improvements made on the lay motion have consisted of increasing the strength, changing materials, providing better compensation for wear, and improving lubrication – all of which are represented in the new crank arm shown.



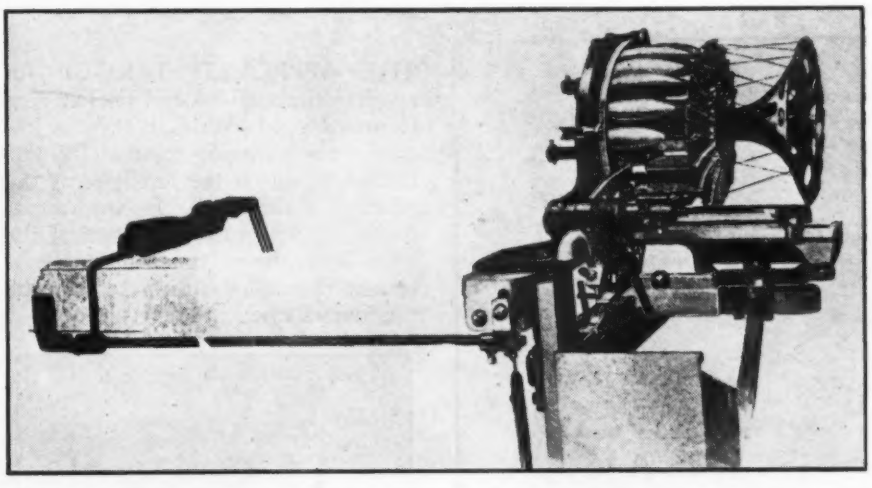
THE ORDINARY crank arm used until the early 1930's required much attention and considerable adjustment because of the wearing off of the wood with which it was constructed.



THE SPRING crank arm shown represents an important development in high-speed looms that was necessary to reduce the shock of bang-offs and other stopping.

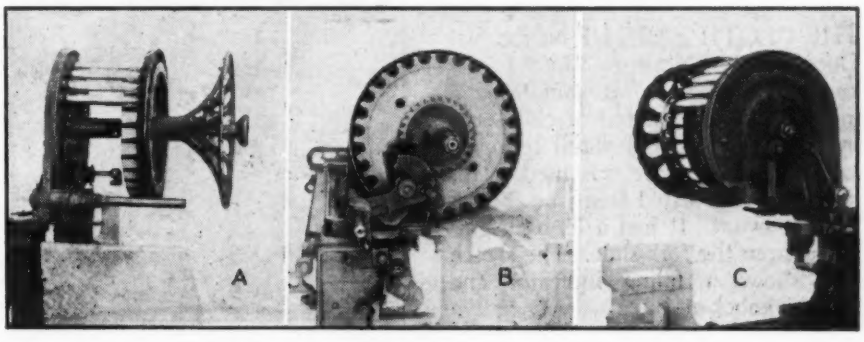


BEFORE ADOPTING for the original Northrop loom the circular magazine shown here, several types were tried, such as half-moon and straight. The above drawing shows the earliest magazine and transfer motion that made automatic weaving possible. It is a reproduction of a cut used in TEXTILE WORLD in 1895.

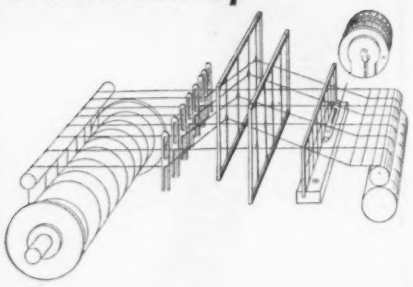


THE ABOVE VIEW shows the early development of the Stimson filling motion applied to the bobbin-changing mechanism on the early Northrop loom. When the thread broke or a bobbin ran out, it actuated the transfer. If, on the next pick, the feeler detected no thread, it would again actuate the transfer; but if a thread was not felt on the third pick, it would stop the loom. In the day of the first Northrop loom, two picks in a shed or partial mispicks were not considered very serious.

THE MAGAZINE views shown at the right represent the latest Draper design. The magazine has spaces for 28 bobbins and can accommodate 25. View *A* shows the non-sloughing device to prevent yarn from coming off and tangling on the ends of the filling bobbins. View *B* shows the actuating mechanism which is connected with the transfer. View *C* shows the new bobbin support which eliminates excessive breakage found with the old.

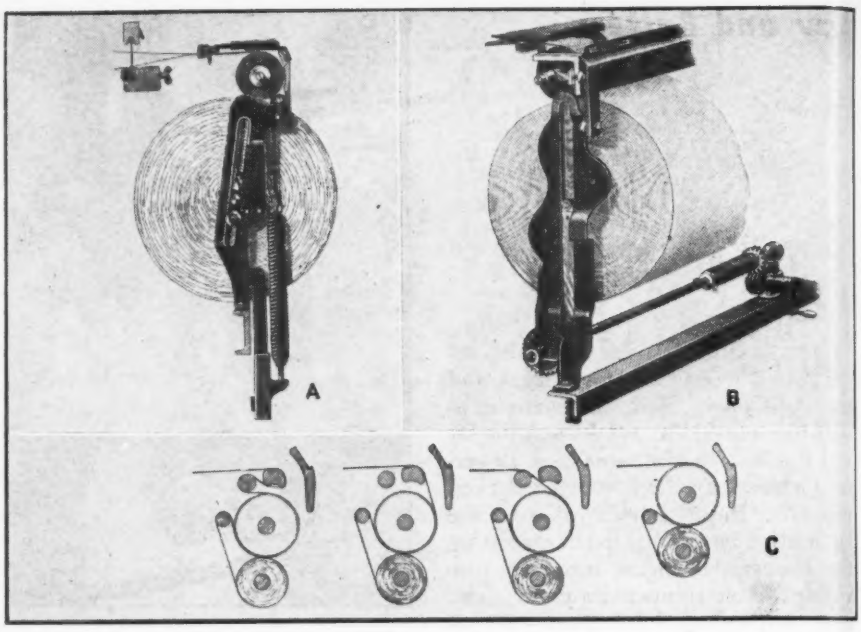


Cloth Take-Up

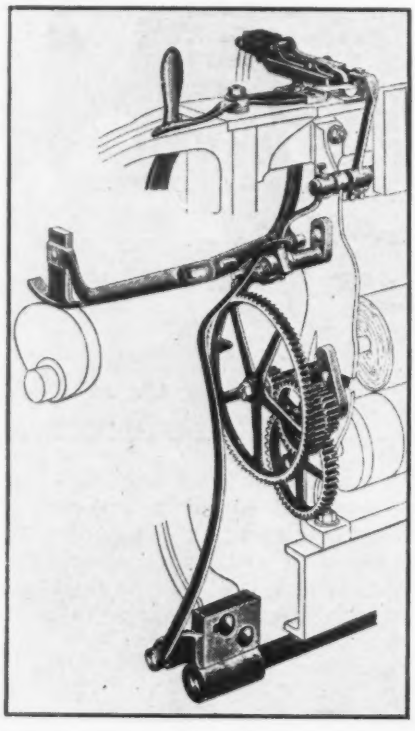


THE early cloth take-up devices were termed "cut-motions." At first there was very little provision for removing the cloth roll. On the early low-roll models, this was not difficult—but it was difficult on some of the high-roll models until the advent of the hand crank shown. On the earlier automatic looms it was also soon found desirable to increase greatly the diameter of the roll of cloth.

Let-back was at first very crude, as can be seen on the sketch of the Mason take-up. This sketch was drawn about 1897 and may not be identical to that on the first Northrop. Earlier take-up mechanisms operated from farther up the sword.

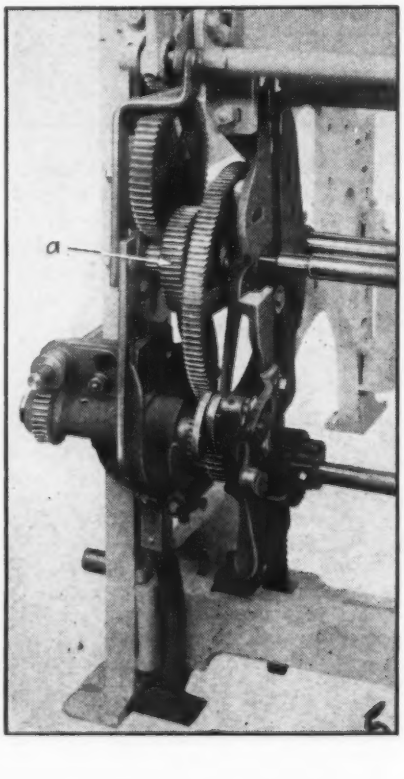


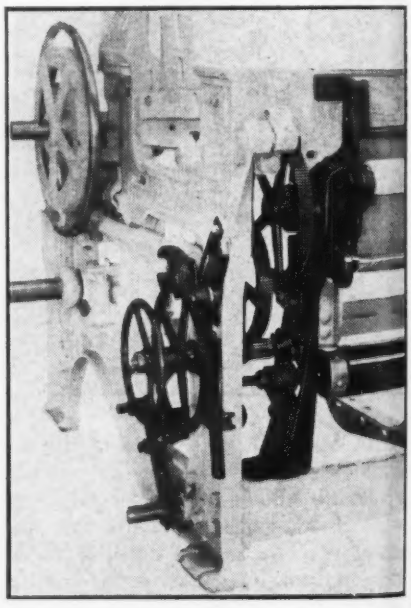
BEFORE THE TURN of the century, the cloth take-up was changed to the "high-roll" take-up shown here. The drawings *A* and *B* show various forms of holding and releasing the cloth. Of them *B* was considered the most advanced method at that time. About 1905 a bracket called a Nutting device was inserted above the take-up roll as shown in *C*. For special weaves, it permitted greater tension. Three arrangements for using the Nutting device are shown; the fourth view illustrates plain threading.



THE CLOTH TAKE-UP on the first Queen City Northrop looms was known as the Mason. It would accommodate only a 9-in. roll of cloth, but by 1897 the "new" low-roll spur-gear take-up shown above was used. This take-up was actuated from the foot of the lay sword. It had a let-back governed from the fork slide. The sketch also shows a filling indicator and shipper knock-off.

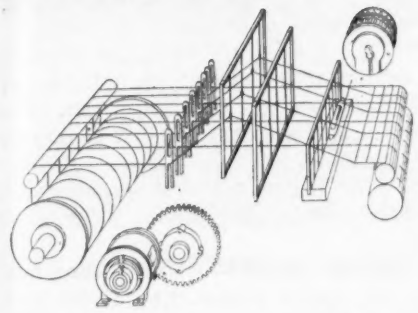
THE APPROVED TAKE-UP for rayon is the semi-low-roll ratchet type shown at right. With it, there is less chance for damaging rayon cloth. The ratchet wheel on the left governs the pickage of the cloth. It is advanced one tooth with each revolution of the loom and drives the large covered take-up through the gearing just inside the loom frame.



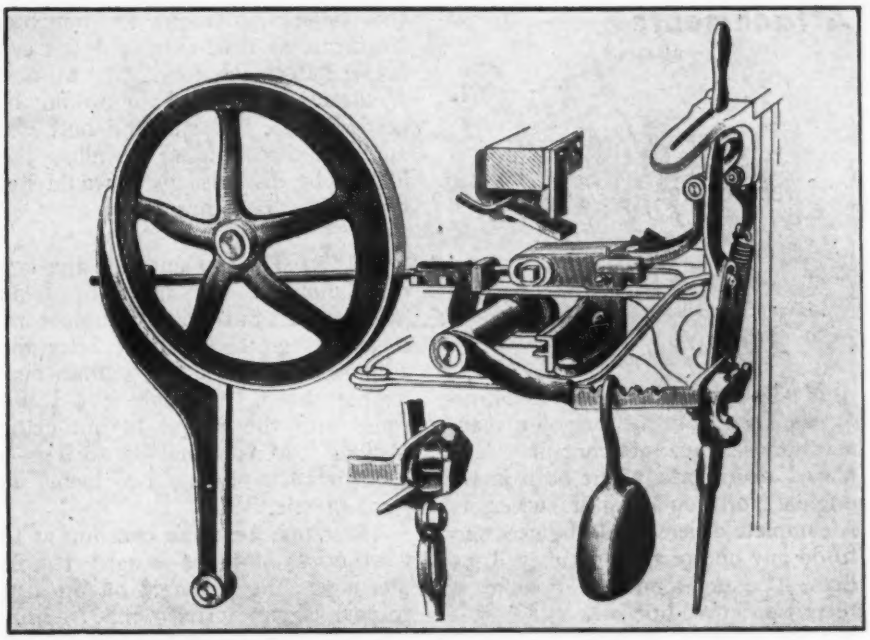


TO DATE, Draper Corp. has developed 83 different kinds of cloth take-ups. These include take-ups driven by ratchet and pawls and by worm gears. The latter are now more generally used for the majorty of weaves. Illustrated (left) is a modern worm take-up with both automatic and foot let-backs. The drive shaft transmits power to operate the take-up through the worm gear seen on the left. The gear chain to the take-up roll can easily be followed. The gear marked *a* is the change gear which governs the picks per inch of the cloth.

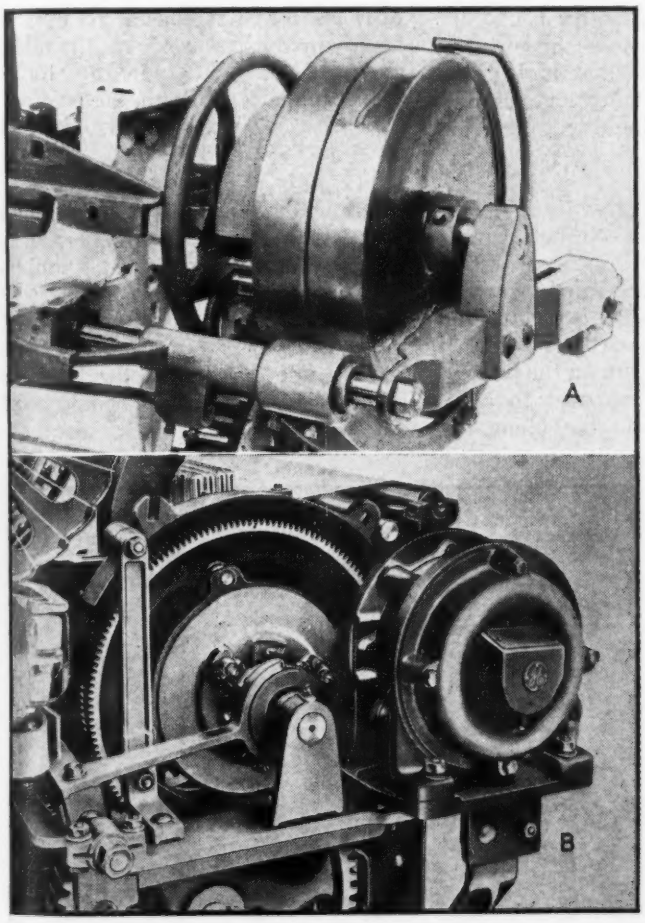
Drive and Brake



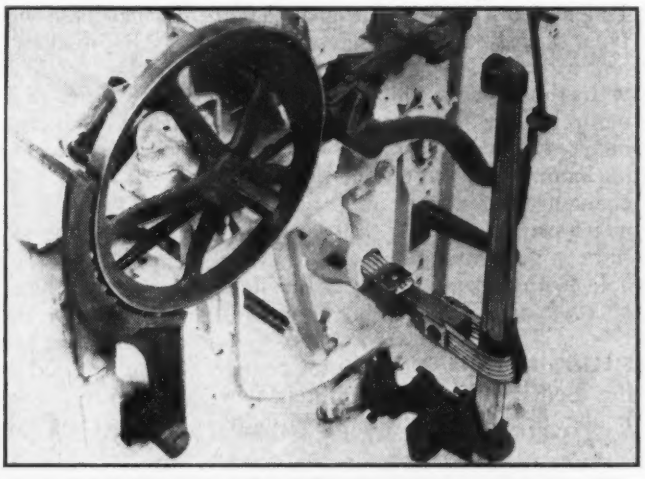
THE first Northrop had a tight-and-loose-pulley drive, as do some looms today. Cone and disc friction drives came later. Early models required considerable end thrust to actuate the friction, and many attempts were made to invent superior drives, including the motor and clutch shown. As looms became heavier, faster, and more precise, greater burden was placed on the braking mechanism. The modern loom must stop quickly.



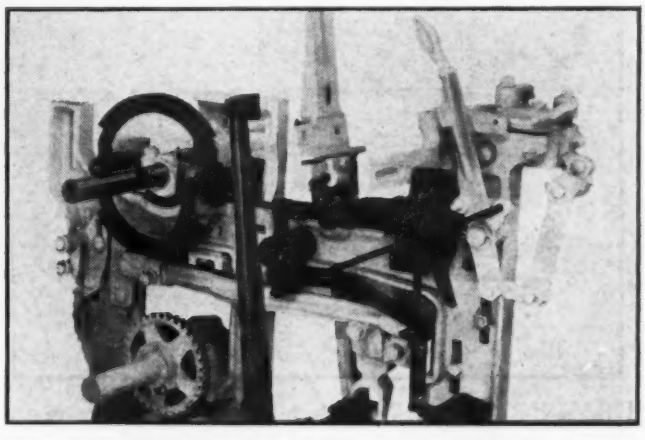
THE FIRST BRAKE was the cast-iron type shown. It had leather on the braking surface. A band brake was developed for heavy, wide looms.



TIGHT-AND-LOOSE-PULLEY loom drives such as shown in the view *A* were used on the early automatic looms. Friction drives were developed at first for the wider and heavier looms. With the introduction of the motor drive, disc friction drives have superseded the early forms. The lower view *B* shows one of the latest forms of motor-and-clutch drive in which end-thrust is largely overcome. This is done by means of friction discs which operate on both sides of the clutch.

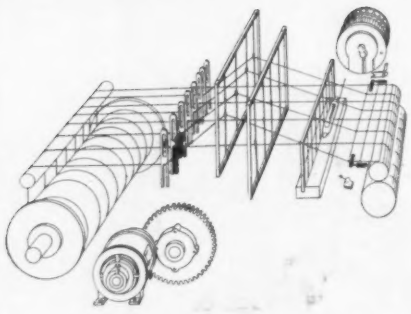


THE ORIGINAL cast-iron brake was improved by the use of cork inserts, as can be seen here. As the loom was improved, other changes were made.



WITH THE high-speed looms, an internal expanding brake was found necessary to offset the greater speed. This view serves as a comparison with the older types.

Attachments



IN addition to the various loom motions shown in the foregoing, many accessories and attachments have played an important part both in the original Northrop and in its successors. A complete article would be necessary to do any one of these items full justice. The development of some of them is followed briefly here.

SHUTTLES. The three shuttles shown were selected from over 10,000 designs that have been made by Draper Corp. It is interesting to note that 3,000 types of shuttles are considered as current models. The shuttle design ranks with the battery, transfer, and stop motion as one of the necessary developments in the automatic bobbin-changing loom. While the automatic bobbin-changing loom was under development, patents covering shuttles ranked third in quantity; no less than 19 were held by the Draper Corp. for this item by 1897, and 27 by 1904.

FILLING BOBBINS. The shuttle-changing loom brought forth entirely new bobbin designs, particularly as to butts and (later) provisions for bunches. Northrop, at first, employed the cop holder but quickly found that for best results a special bobbin would be needed. The taper at the butt was once useful in shaping the filling but had to be discarded as it would not work with the sliding feeler.

TEMPLES. Temples antedate the first installation of the automatic loom by 78 years, but this attachment received its greatest impulse after the automatic loom. The "self-moving" temple shown, although it did not come into the period of automatic weaving covered, enabled weavers—back in 1816—to run two looms instead of one.

There may be some question as to whether or not the hinged temple shown was the one used on the first automatic-loom installation. It probably was, even though it had no thread cutter. Thread cutters were put on temples on automatic looms about 1898, the year in which the *E* model Draper loom was introduced.

The modern temple shown (No. 483 Dutcher) is a good example of the many types of Dutcher temples now in use. It houses double rolls and has an adjustable top.

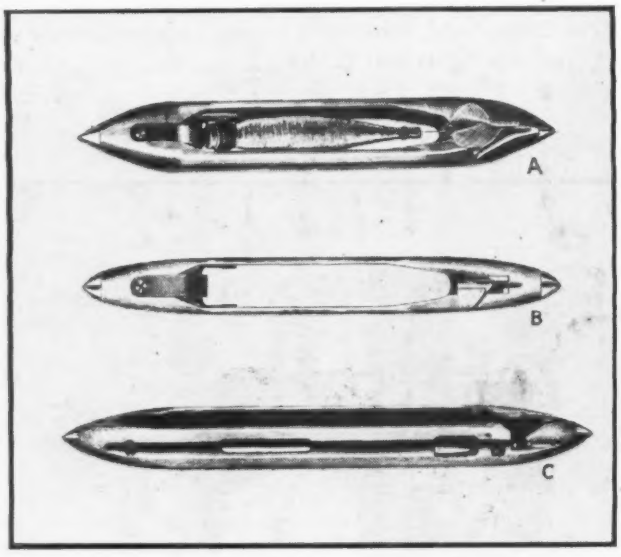
FEELERS. The first Northrop looms had no filling feelers—the yarn simply ran out. By 1904 at least seven different feelers had been tried. One of these shown operated by measuring the distance between the outside of the shuttle and the yarn on the bobbin. In theory, it was supposed to cause a transfer just before the filling ran out—if the bobbin was true, if it was not loose, if the setting was correct, and several other "ifs."

The first sliding feeler, and the forerunner of the extremely simple Midget shown, was the Stimson feeler. The Stimson feeler was the first to operate by sliding.

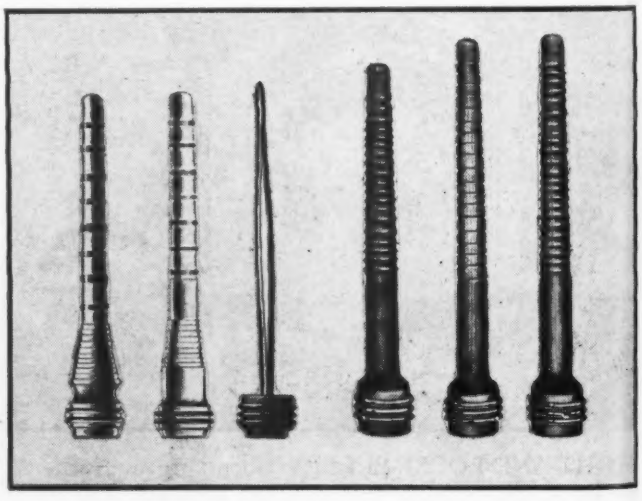
The Midget model shown embodies the latest design of sliding feeler.

THREAD CUTTERS. Until the relatively recent introduction of the Stafford design, the thread cutter was one loom device that constantly gave trouble. The problem lay in designing a cutter that would sever the thread of a bobbin to be ejected and then would hold the thread until a temple cutter could snip it close to the cloth. At the same time, it was necessary that the cutter sever the end close to the shuttle eye, or the end from the expended bobbin would not be pulled free of the shuttle as the quill fell. The latest Draper-Roper thread cutter shown was obviously superior to the early one but was considered unsatisfactory mainly because it cut the filling about 12 to 15 in. from the shuttle eye. Compare this with the Stafford, which leaves an end of only 1½ to 1¾ in. from the shuttle eye.

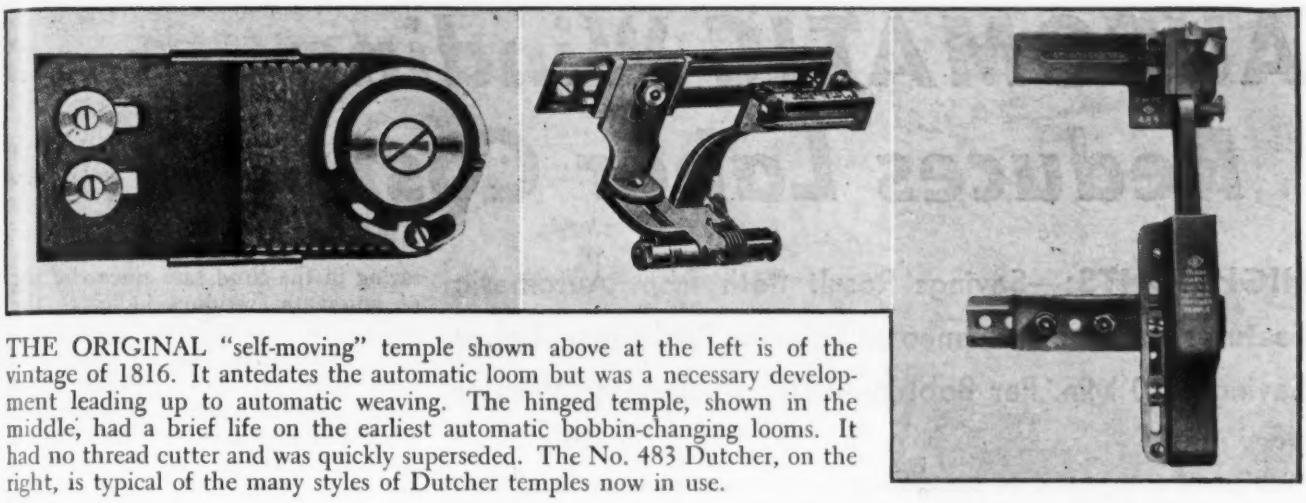
All of the attachments shown, with the exception of the temples, were necessary developments for bobbin-changing operation. The evolution of many other loom attachments, not shown, such as protector motions, center and side feelers, and the like, has also contributed to the progress of automatic weaving.



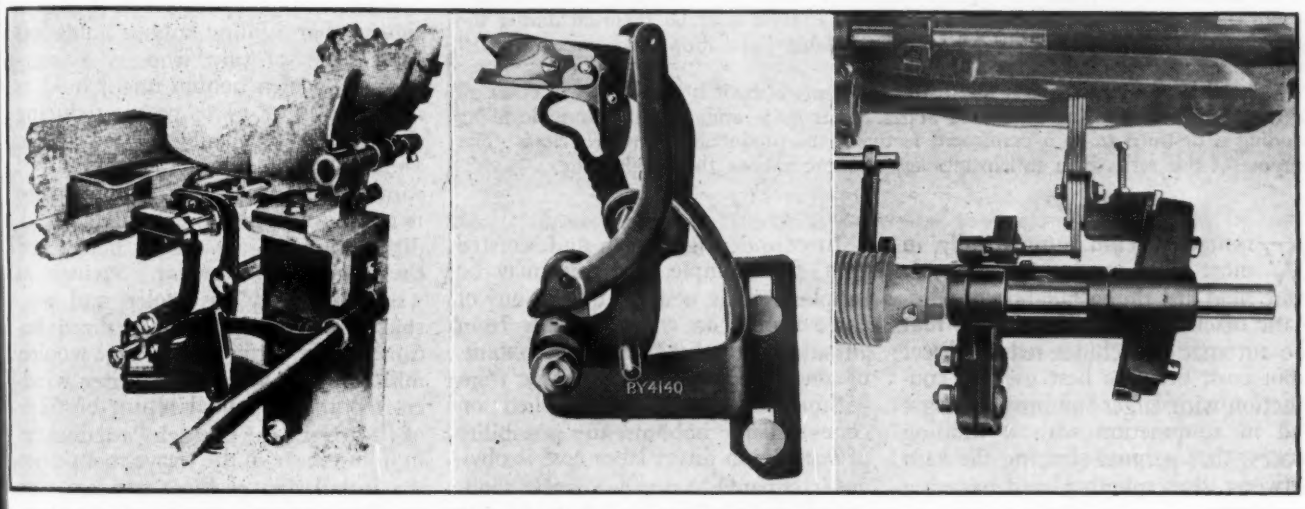
DRAWINGS A and B illustrate shuttles that were in use shortly after the development of the Northrop loom. They represent only two of about two dozen variations that were available on the early looms. Shuttle C is the latest Draper designed for high-speed rayon looms.



ON THE LEFT, in the above picture, are shown three early bobbin designs. The first is one of the earliest but the second is the type selected by Queen City. Since much filling was run on cops, a cop holder was also needed. The three bobbins on the right represent modern designs, all of which have provisions for bunches. The last two are in very common use for filling on Draper looms.



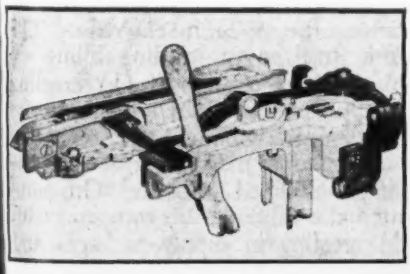
THE ORIGINAL "self-moving" temple shown above at the left is of the vintage of 1816. It antedates the automatic loom but was a necessary development leading up to automatic weaving. The hinged temple, shown in the middle, had a brief life on the earliest automatic bobbin-changing looms. It had no thread cutter and was quickly superseded. The No. 483 Dutcher, on the right, is typical of the many styles of Dutcher temples now in use.



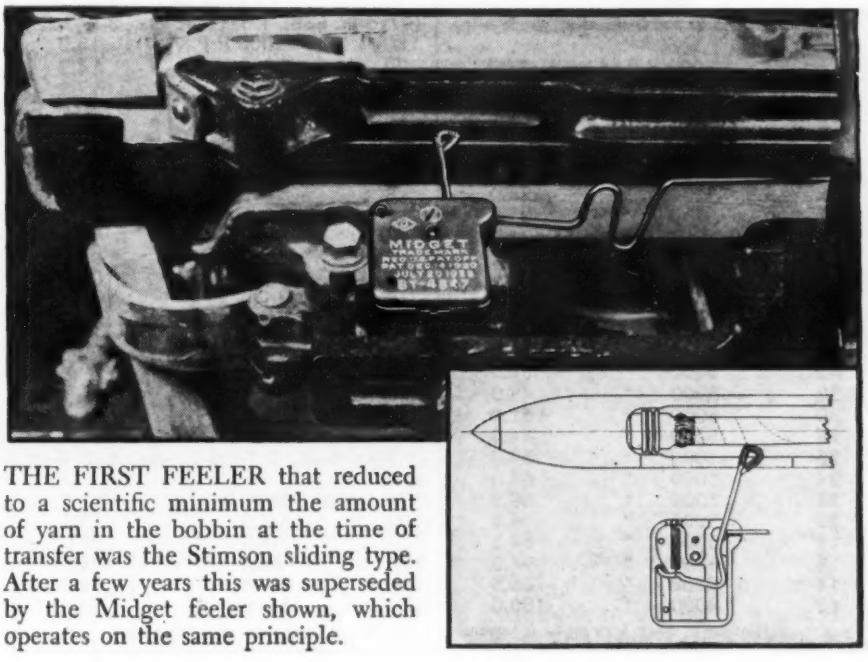
THIS IS the Draper-Roper thread cutter that appeared in the Northrop looms after a feeler motion had been developed. None was used on the very first Northrops.

BY THE TIME the Stafford thread cutter was introduced, the Draper-Roper shown had evolved to this design. It usually worked well if bobbins had plenty of distance to fall.

THE STAFFORD thread cutter shown here is considered the last word in devices of this type. It has done much to eliminate jerked-in filling caused by trailing end.



THIS FEELER represents the seventh type tried on early Northrop looms as the need for a filling-supply detector became intense. This feeler operated when the yarn on the bobbin had been woven off to a given distance from the face of the shuttle.



THE FIRST FEELER that reduced to a scientific minimum the amount of yarn in the bobbin at the time of transfer was the Stimson sliding type. After a few years this was superseded by the Midget feeler shown, which operates on the same principle.

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AUTOMATIC Winding Reduces Labor Cost

HIGHLIGHTS:—Savings Result Both from Automatic Features and from Influence on Spinning Packages—Labor Saving 0.10 Min. Per Bobbin—Whitin-Schweiter Winder

With general resumption of the manufacturing of textile machines in the offing, added interest is manifest in the various automatic filling winders which are being considered in the modernization plans of most weaving mills. Production of these winders began before the war, and limited development work has been done on them all during the emergency. There have already been several sizable installations and numerous trial installations.

The article presented here is the first of a series which, it is expected, will cover all of the types produced in the United States. It is quite evident that automatic filling winding is destined to be a permanent factor in the production of woven cloth. The purpose of this series is to anticipate many of the questions that might arise.

WINDING FILLING automatically, in most cases, involves considerably more than just the installation of automatic machines. While it is true that the automatic machines reduce direct labor cost, they are best used in conjunction with larger spinning packages and in conjunction with a winding process that permits cleaning the yarn between the spinning and weaving operations.

In considering woolen and worsted yarn, for example, the yarn may be supplied to the weaving unit in any of three forms: on cones (usually from an outside supplier), on large bobbins, or on filling bobbins (usually from within the plant). If supplied on cones or large bobbins, the possibility of a saving in direct labor cost is obvious, compared to non-automatic winding. It is not quite so easy to see the saving in the third case since the use of automatic winding indicates the adding of two winding operations: from spinning bobbins to cones and from cones to filling bobbins. But here, in actual practice, is where the greatest savings are often found in an automatic-filling-winding program—if in conjunction with large-package spinning.

This is easier to see when it is considered that a filling bobbin holds less than 2 oz. of yarn whereas a large-package woolen bobbin might hold as much as 24 oz. This means reducing doffing costs by about 90% and at the same time increasing the amount of yarn on the new filling bobbin, since it can be wound more firmly. In addition, bunches are usually better and the winding is superior. Savings in waste, especially on woolen and worsted yarns, can often be realized because of the better bunch. One woolen mill running Whitin-Schweiter winders reports an annual return of 62% of its investment through "a reduction in filling waste in the weave room since the installation of these winders, due to the uniform bunch which these winders build."

Whitin-Schweiter Production Table

Yarn	Spindle Speed	Production Lbs/Spdl/ 40 hrs.
WOOL		
(5/8-in. bob., 1 1/16-in. dia., 6 3/4-in. trav.)		
8 run	5000 R.P.M.	74.0
7 "	5000 "	84.5
6 "	5000 "	98.5
5 "	4000 "	93.5
4 "	4000 "	116.0
3 "	4000 "	154.0
2 "	4000 "	224.0
1 "	4000 "	395.0
3/4 "	4000 "	472.0
WORSTED		
(9/16-in. bob., 1 3/16-in. dia., 7 7/8-in. trav.)		
60s	5000 R.P.M.	25.7
50	5000 "	31.0
40	5000 "	38.5
32	5000 "	48.0
30	5000 "	51.0
28	5000 "	54.0
26	5000 "	59.0
24	5000 "	64.0
22	5000 "	69.5
20	5000 "	76.5
18	5000 "	84.5
16	5000 "	94.5
14	4000 "	86.5
12	4000 "	100.0

Yarn	Spindle Speed	Production Lbs/Spdl/ 40 hrs.
COTTON		
(9/16-in. bob., 1 3/16-in. dia., 8-in. trav.)		
80s	5000 R.P.M.	13.0
70	5000 "	14.7
60	5000 "	17.2
50	5000 "	20.6
40	5000 "	25.6
30	5000 "	34.3
20	5000 "	51.0
18	5000 "	56.0
16	5000 "	62.5
14	5000 "	72.5
12	5000 "	84.5
10	5000 "	101.0
8	4000 "	100.0
6	4000 "	131.0
4	4000 "	136.0
2	4000 "	216.0
RAYON		
(1/2-in. bob., 1 1/16-in. dia., 6 3/4-in. trav.)		
75 denier	5000 R.P.M.	13.0
100 "	5000 "	17.5
150 "	5000 "	26.0
200 "	5000 "	34.0
300 "	5000 "	51.0
500 "	5000 "	84.0

Allowances have been made for average stoppages on each type of work shown.

WHITIN-SCHWEITER WINDER: When considering the filling-winding operation itself, assuming a large-package supply, it is necessary to consider some particular type of winder—in this instance, the Whitin-Schweiter. The work involved in winding filling on this machine consists of (1) creeling in supply packages, (2) filling batteries with empty bobbins, (3) tying up breaks, and (4) disposing of the containers of filled bobbins. On non-automatic winding, this compares with (1) creeling in supply packages and rethreading, (2) starting spindle, (3) tying up breaks, (4) doffing, and (5) disposing of the filled bobbins. Of course, other factors enter in, such as untangling supply bobbins, which should be no different on either type; and such as walking, which should be less for the automatic machine.

Assuming that creeling a supply package and magazining the tail on an automatic machine are equal to creeling a supply package and restarting a spindle on a non-automatic machine, the direct machine saving is based on the elimination of doffing and restart-

ing. These two operations, under ideal conditions and with no allowances for fatigue or any other factors whatever, is 0.10 min. per bobbin produced. Using a base pay of 50c. and an hour and a 1-oz. net package, this saving amounts to 1.3c. per pound, which can be considered the minimum. If this figure is multiplied by figures shown in the accompanying production table, the saving of direct labor per spindle per week can be determined. For example, for 30s worsted it would be 66c. per 40-hr. shift operated or $1.32 for two 40-hr. shifts. It can readily be seen that the greater savings per week are with the coarser yarns—on 4-run woolen the saving per 40-hr. shift would be $2.00.

The foregoing figures do not take into consideration many factors which can be obtained only from particular mill set-ups. It is assumed that these factors will balance off, but the mass of them seems to point in favor of the automatic machines. When running automatic machines, less skillful direct labor is required and higher efficiency can be expected, in addition to higher production due to spindle speeds which are more than double that of non-automatic machines.

With automatic machines, jobs can be specialized. One duty can be to keep hoppers filled, another can be tying breaks, a third can be creeling in supply packages, and a fourth can be collecting filled bobbins on a truck for delivery to weave room.

MACHINE OPERATION. The automatic feature of the winder performs the tasks that require the greatest skill and speed on the non-automatic machines—the doffing and restarting of the quills. On the Whitin-Schweiter, this is achieved by means of a series of cams mounted on a common shaft so that they cannot get out of adjustment with each other.

Assuming an empty bobbin in place, the machine builds a bunch automatically. For this, the same guide is used that winds all of the bobbin; the stroke is merely shortened. This achieves a flat bunch which can be made any width up to $\frac{11}{16}$ in. The length of the bunch is set by the knob shown at *A* in Fig. 1. This length can be from 0 to 13 yd. for coarse yarns and from 0 to 17 yd. for medium and fine yarns.

After the bunch is built, the taper of the bobbin is governed by the adjustable taper former *B* attached to the pick bar. During this time, and until the winding is completed, the guide makes a full stroke and a layer-locking wind is produced. The taper is normally less than $\frac{3}{4}$ in. for woolen yarn and 1 in. or more for worsted.

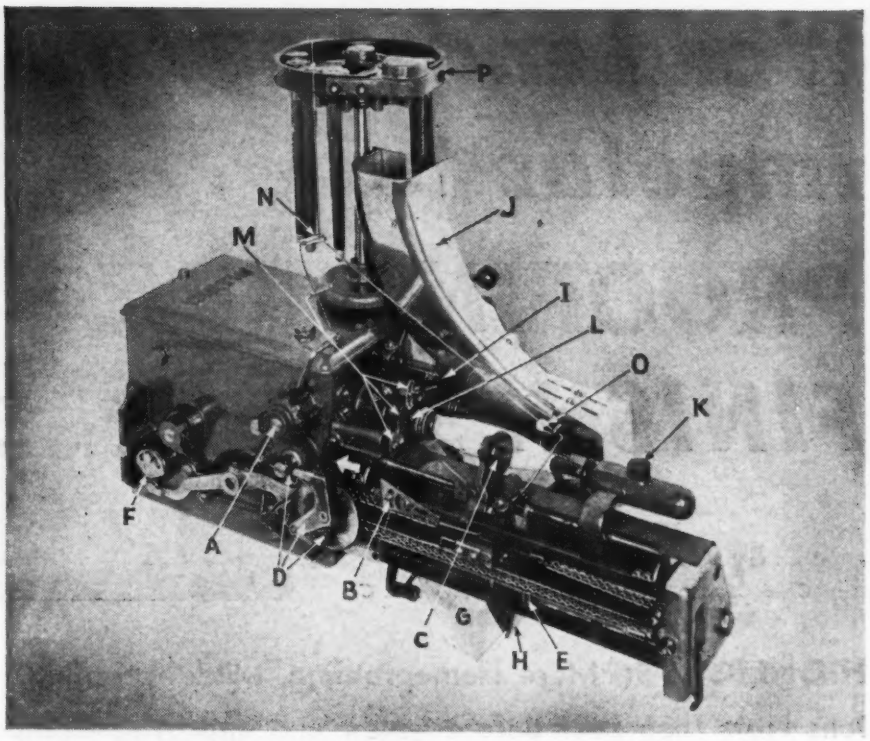


Fig. 1. Letters shown on this Whitin-Schweiter unit refer to description in text.

The diameter of the package is predetermined by setting an adjusting screw shown by arrow. The smooth feeler wheel *C* is mounted on ball bearings and develops the same surface speed as the outer diameter, so that it does not chafe. When the bobbin reaches maximum diameter, the feeler assembly is moved slightly and actuates an advancing mechanism *D* that moves the guide forward. A constant diameter is maintained regardless of the yarn count or tension applied. Diameter limits which are possible are greater than can be accommodated in any woolen and worsted shuttles commonly used.

The length of the bobbin can be from 6 in. to $10\frac{1}{8}$ in. as desired. An adjustable catch *E* limits the amount of yarn put on the bobbin and starts the doffing mechanism into operation. The thread-guide assembly returns to starting position, with or without a backwing around the bobbin, as is predetermined by setting cam *F*. Then, the spindle head retracts into the gear box. This releases the bobbin into a chute *G*, where it is temporarily arrested by a gate *H*.

A hook *I* moves forward to pull the yarn against the spindle head, where it is held by the pressure of the new bobbin which has been brought into place by a carrier at the bottom of the chute *J*. The spindle head comes forward and a scissors cuts the thread running to the full bobbin. The gate *H* releases the full bobbin and drops it into a receptacle. Delivery of another empty bobbin from the magazine to the bottom of the chute completes the cycle.

MACHINE FEATURES. Note the hand knob *K*. It permits pressure to be taken off the bobbin in place so that it can be turned by hand when needed, as in piecing up. The shield *L* is a late development to prevent yarn from winding around the driving shaft. The new thread-cutter *M* operates only for a short period of the cycle and is so designed that it cannot damage the bobbin. This replaces a rigid cutter on early models.

Although a wide range of wraps per stroke is possible with the machine, 6.35 for woolen and 7.75 for worsted have been found to give good results. These figures refer to one way, not the stroke out and back.

The thread guides *N* and *O* are self-threading. Guide *N* is part of the stop motion which disengages the whole unit from the drive shaft if an end breaks, runs out, or becomes slack. A safety clutch has also been built into the assembly, within the box, to protect against undue strain or breakage.

The magazine *P* holds 12 to 22 filling bobbins according to type and size. An additional quill is held in reserve at the bottom of the chute.

Should it be desirable to take off a unit, this can be done by removing three screws and does not affect any other spindle. Each unit is complete in itself back to the drive, which is a straight shaft with friction wheels.

War Lends Impetus to PROOFING FINISHES

By C. NORRIS RABOLD
Chief Chemist, Union Bleachery, Greenville, S. C.

HIGHLIGHTS: More Flameproofing, Mildewproofing, and Waterproofing of Cottons Now Than Ever Before—New and Improved Compounds Used—Many Applications Will Carry Over Into Postwar Period —Disadvantages Are Being Overcome.

DURING THE past several years, a number of articles have appeared on the influence wartime developments will have upon our environment after the war. Some of these articles have been of a rather fanciful nature, designed to attract attention, while others have dealt more soberly with this subject.

Following are several phases of cotton goods finishing which, it is felt, will influence both the finishing industry and the consumer public. None of the finishes mentioned are an outgrowth of the war, for they have all been practiced for a considerable period of time; but their development has received tremendous impetus since 1941.

Three types of finishes on cotton fabrics have been used in enormous quantities by the military services. The first of these is flameproofing, the second is mildewproofing, and the third is waterproofing or water-repelling. Often all three are used together.

Press Ass'n., Inc.

Application of a flameproof finish could have prevented this circus tragedy

FLAMEPROOFING. For many years, cotton has been treated with various chemicals in order to render it less inflammable. Because of the nature of cellulose, no treatment so far has succeeded in producing fireproof fabrics in the sense that asbestos, for example, is fireproof. Chemical applications to cotton will do no more than render it hard to ignite and prevent its bursting into flame when fire is applied to it. Cotton fabrics when properly treated by flameproofing materials will neither burn themselves nor exhibit a prolonged afterglow when the source of ignition is removed. However, they may be damaged or destroyed, in the sense that they become charred in contact with the igniting flame.

There have been known for some time a great number of compounds, most of them inorganic salts, designed to prevent ignition of cotton. There have also been patented various combinations of these salts, and some of the formulas given contain a great many different compounds in varying proportions. Heading the list in favor, and probably in efficiency, have been various mixtures of borax and boric acid. Ammonium salts, such as ammonium chloride, nitrate, sulphate, phosphate, etc., have also been used extensively. Sodium and potassium salts, such as the stannate, phosphate, silicate, and carbonate, as well as salts of the heavier metals, such as calcium, magnesium, zinc chloride, iron hydroxide, lead chromate, etc., have also been

used. Among organic compounds, ammonium sulfamate has been applied successfully. Out of the war has come the widespread use of the chlorinated hydrocarbons, particularly chlorinated paraffin.

Most of the inorganic salts mentioned possess several drawbacks, one being the fact that many of them are water-soluble and therefore they can be leached out with a simple water treatment, thus removing the fireproofing quality of a fabric. Those which can be precipitated within the fiber, thus rendering them more permanent to water and laundering, very often impart an objectionable color to the cloth. Practically all of the inorganic salts have to be used at reasonably high concentrations for them to be efficient, and this very often results in an objectionable altering of the hand and feel of a fabric. However, many of them can be used successfully on fabrics not to be laundered, or used outdoors. Such fabrics can usually be dry-cleaned, as practically all of the inorganic chemicals are insoluble in the usual dry-cleaning solvents.

Chlorinated paraffin has been brought into prominence due to the fact that millions of yards of duck, particularly, have been treated with it for a variety of military uses. It seems to be, as a flameproofing chemical, satisfactory for outdoor use, being insoluble in water. However, most chlorinated hydrocarbons are soluble in the common dry-cleaning solvents, so treatment with such solvents would remove the fire-resistant qualities of a fabric. The armed forces have used many of these materials in the treating of tent ducks, motor covers, tarpaulins, life-jacket covers, upholstery, jeep and truck tops, camouflage cloths, and other fabrics to be used where a fire hazard exists. It can easily be seen that these same uses would apply to postwar activities, so that we may well expect a continuation in the production of flameproof fabrics. In addition, it is likely that treatments will be expanded more and more for such purposes as treating upholstery fabrics, draperies, furnishings and fittings in public places—such as circuses, theatres, restaurants, hotels, office buildings, etc.—where the danger of fire is ever present. We may expect formulations which will render the finisher's job easier and simpler in satisfactorily treating cottons with fireproofing materials for specific purposes.

MILDEWPROOFING. Along with the demands for flameproofed materials, there has been as great, or greater, demand by the armed services for mildewproofed cloths. In the tropics, it was found that cellulosic materials stood so little chance against the fungi existing there that sometimes they did not even reach their destination before becoming mildewed. As was true of fireproofing chemicals, fungicides had been in existence and used before the war, but the extreme conditions existing in the tropics proved that some of these agents were not sufficiently effective. New materials were sought by the supply departments of the Army, Navy, and Marine Corps. Tests were developed in order to evaluate new chemicals, and application methods were worked out in various finishing plants. Particular attention was given first, and is still being given, to those fabrics which would be exposed to the most severe conditions. These were much the same items as mentioned under flameproofing—namely, tent ducks, etc. Demands for these materials came mostly from the Army and the Marine Corps, since these services would see duty ashore in the tropics, and thus their equipment would be the most exposed.

Water-repelling finishes hold interest in fields other than cotton. Illustrated is a waterproof umbrella cloth and a water-repellent coat.

Among the fungicides which have been applied by the Army to cotton fabrics are the following:

Ortho-phenyl-phenol
2-chlor-o-phenyl-phenol
Penta-chlor-phenol
Salicylanilide
2, 2-dihydroxy-5, 5-dichlor-diphenyl-methane
Copper naphthenate
Copper oleate
Cuprammonium hydroxide
Cuprammonium fluoride
Zinc dimethyl dithic-carbamate
Phenyl mercury acetate
Phenyl mercury oleate
Alkyl dimethyl benzyl ammonium salts
Amino-guiacol benzo-thiazole imimo-urea

It is safe to say that none of these are ideal insofar as the user and the finisher who applies them is concerned. Some must be applied from a solvent solution of an organic nature. Unfortunately, such solvents may be inflammable and the fumes toxic. It is necessary to apply other fungicides by a two-bath method, the material being in water-soluble form in the first solution and subsequently precipitated in the fabric by passing the treated cloth through a second bath. Again, this method is not favored by finishers, because of the extra handling required and danger of non-uniformity.

A third method of application is by the single-bath method where the insoluble fungicide is suspended in an aqueous solution and the cloth passed through this bath. Here again, non-uniformity may result, due to the dispersed material settling out, depositing on the surface of the fabric, etc.

Other drawbacks to these chemicals are that some possess a toxic effect upon the people handling them. They may possess an unpleasant odor; have a distinctive color; or, while giving good initial protection, lack durability. Some are water-soluble or soluble in common solvents. Fortunately, some of the drawbacks to these materials are not too important at the present time, since the uses to which they are put, in themselves, take care of some of the objections. For example, copper naphthenate possesses a distinct color, as do all the copper compounds; yet it has been used on many yards of army duck, in conjunction with flameproofing and waterproofing materials. Since the shade of the finished product is a rather dark olive drab, the color of the mildewproofing agent is of little importance. It should be added that this material also possesses a distinctive odor, but since the treated fabric is to be used outdoors, this odor is not objectionable. However, when we turn to postwar treatment of fabrics, color, ability to stand laundering and dry-cleaning, toxicity, and odor will all become of greater importance.

Postwar uses are indicated by those to which the armed forces are already putting such materials. Even under relatively mild and infrequent exposure to conditions favorable to mildew, the life of a fabric can be prolonged. For those finishes which are non-toxic, additional uses are indicated. Some

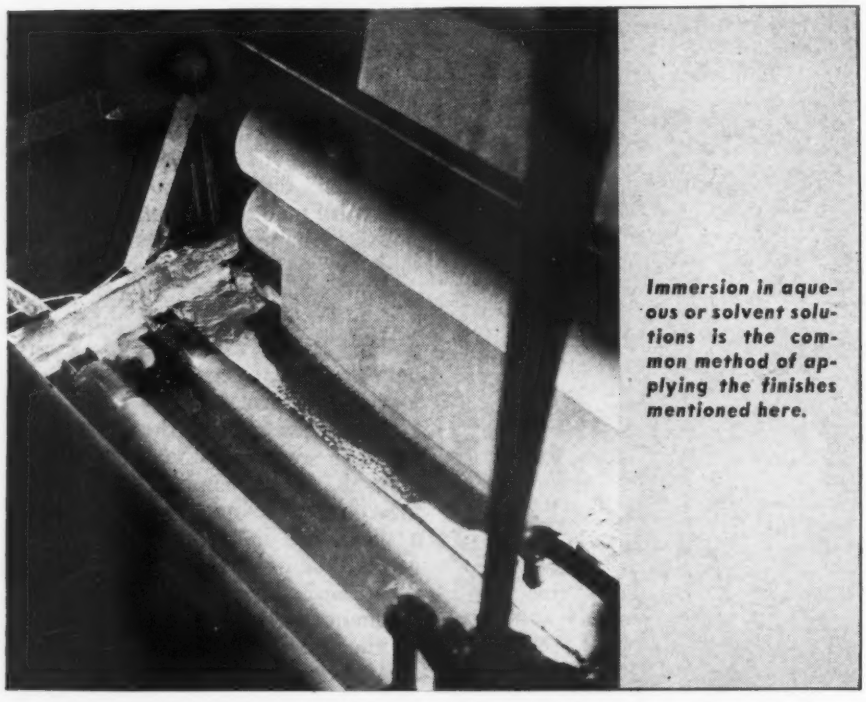
of these compounds possess decided germicidal as well as fungicidal properties and could be used, for example, in the treatment of hospital bedding and furnishings.

Where rapid deterioration of fibers and fabrics occur under hot, humid conditions, fungicides would be most beneficial in treating all kinds of household furnishings of a cellulosic nature, as well as clothing.

WATERPROOFING AND REPELLING. Waterproofing and water-repelling, though the terms are used rather loosely at times, differ. To the technologist, a waterproof fabric is one to which has been applied a continuous film which will not permit the penetration of water. Fabrics which have been treated so that only the individual fibers are impregnated or coated with the water-resistant film and in which the interstices remain open, are more properly classified as water-repellent or water-resistant.

During the last war, both natural rubber and drying oils were used for coating and impregnating fabrics. From the repellent angle, these were generally satisfactory, since they allowed no water to come through; but such fabrics were disappointing in other ways. In storage and in actual use, they became tacky so that folds and layers adhered to each other, and attempts to pull them apart very often resulted in either pulling off the coating or actually tearing the fabric. In cold weather, such treated fabrics had a tendency to stiffen, so that handling a tarpaulin cover became somewhat the same problem as handling sheet steel.

When this war started, our armed forces were in much better position so far as the efficient production of both water-repellent and resistant fabrics was concerned. During the late thirties, commercial development of cotton goods so treated was on the increase. Manufacturers of various products had been working to increase their efficiency. Synthetic resins and rubbers were in the offing. The so-called durable water-repellents were being developed. Finishing plants were being equipped and their personnel trained to handle such applications successfully.



Immersion in aqueous or solvent solutions is the common method of applying the finishes mentioned here.

The durable-type repellents which are meeting with favor, because of their resistance to repeated launderings and dry-cleanings, have been applied in large quantities, particularly to military wearing apparel. The less permanent repellents of the wax-aluminum-emulsion types are also in favor in primary applications, even though they are not especially resistant to laundering or dry-cleaning. Since the durable types tend to have their efficiency diminished by repeated washings, the wax-repellent types have proven a valuable adjunct for re-treating fabrics in the field, being easy to apply. Application of waxes dissolved in organic solvents have also been used extensively. Both the wax-emulsion and wax-solvent types have been used in conjunction with some of the flameproofing and mildewproofing agents mentioned previously, since it is possible to combine them together into a single product, thus enabling a processor to apply all three treatments in one application. Widespread use has been made of this three-in-one treatment for the protection of tent ducks and other heavy cotton fabrics used for the protection of equipment and supplies.

The field of uses for water-repellents after the war will be greatly increased. The advantages of cotton fabrics so treated are apparent to every one of our men in the service. Lightweight flexible tents, tarpaulins, etc., which do not stiffen up under frigid conditions, nor stick together under extreme heat, will be utilized more and more in peacetime pursuits. The army has striven for lightweight equipment, so that the soldier does not have to lug unnecessary weight in combat. It has been found, for example, that two layers of a lightweight cotton fabric, suitably treated with a water-repellent, protects the wearer against the elements much better than a far heavier-weight cloth. Not only that, greater warmth results.

Present day raincoats consisting of a lightweight cotton fabric coated with one of the vinyl resins or synthetic rubbers offers durability, compactness, and the same waterproofing results as did the far heavier raincoats of yesterday.

Water-repellent finishes have been found, also, to possess advantages for other reasons. Cotton fabrics so treated, do not soil so readily as untreated materials. Neither do they deteriorate so fast, since perspiration, in the case of personal garments, will not attack the fabrics so quickly. Furthermore, since they do not absorb moisture, but allow it to evaporate through the interstices, cotton wearing apparel shows less tendency to wrinkle and crease. In addition, the wearer of fabrics so treated is apt to feel cooler under humid conditions, since his clothes do not stick and cling to him. It is likely that we shall see more, if not all, household cotton fabrics treated with some sort of water-repellent finish. One can easily see the advantages of having tablecloths, bedsheets, slipcovers, and many other items of household use finished this way. In wearing apparel itself, it is probable that such items as women's summer dresses, house aprons, men's cotton work trousers, sport shirts, and so on, will be given this type of finish. The outdoor applications to which our armed forces are putting water-repellent finishes, combined ofttimes with fireproofing and mildewproofing treatments, will be utilized in industry more and more after the war.

DURATION of Roving Can Be Found Quickly

HIGHLIGHTS: Old Methods Involve Lengthy Calculations—"Constant" Method of Figuring Is Faster—Table of Constants Can Be Worked Out for Any Mill.

By CLARENCE McELROY and MARCUS GROSS

QUICK DETERMINATION of elapsed running time of creeled roving is possible by means of a constant whereby the hours run can be obtained almost immediately.

The number of roving changes per hour, or for any definite time limit, is a chief factor in the assignment of a spinner's or roving tender's task. However, to eliminate confusion as to what is meant by "elapsed running time," it can be construed to include the efficiency only of the roving and spinning frames.

LONG METHODS. Two long-drawn-out methods of calculating running time of roving are listed to show the evolution that led to the constant method. The first method, based on yardage fed, is as follows:

Assume a 2.00-hank roving is being fed, single end, with roving weight at 20 oz.; the next step is conversion of yd. per lb. of the 2.00-hank to total yardage on the bobbin: $840 \times 2 = 1680$ yd. per lb. of 2.00-hank. Converting 20 oz. to pounds, we get 1.25 lb. Then, $1680 \times 1.25 = 2{,}100$ yd., total yardage on bobbin.

Assume surface speed of back roll is 30 in. per min.; frame operates at 90% efficiency:

$$\frac{30 \text{ in.} \times 60 \text{ (min. per hr.)}}{36 \text{ (in. per yd.)}} = 50 \text{ yd. per hr.}$$

$\frac{2{,}100 \text{ yd.}}{50 \times .90} = 46.66$ hr. elapsed running time of the creeled roving.

The outlined method is accurate, but time-consuming.

The second method—which, incidentally, led to the formation of the constant—is the pounds-per-spindle method. Take the above problem plus additional data; namely, a 15 draft to produce a 30s yarn. Work week is 40 hr. The following calculation gives pounds per spindle:

$\frac{30 \times 15 \times 60 \times 40 \times 0.90}{36 \times 840 \times 30} = 1.071$ lb. per sp. for 40 hr.

Having drawn this poundage per spindle, 1.071 lb. from 1.25 lb. of roving in 40 hr., the next calculation is to find the quotient in weeks and then multiply it by 40 hr. giving elapsed running time of the creeled roving.

$1.25 \div 1.071 = 1.167$ quotient in weeks.

$1.167 \times 40 = 46.68$ hr. elapsed running time.

Again, this represents a long-drawn-out method; accurate for most purposes, but certainly not a very speedy one, as three distinct calculations must be made.

"CONSTANT" METHOD. A chart has been prepared, as illustrated, to assist overseers, general supervisors, and time-study men. The chart is applicable to spinning, but the general procedure can also be applied to roving in the card room.

Divide standard pounds per spindle into the hours that constitute a work period, to obtain a constant. The constant, multiplied by the pounds roving from which the yarn was drawn will give the elapsed running time of the creeled roving. To see this, follow the example given below.

Example: A 32s yarn is made from 10-oz. roving, double-end fed. Pounds per spindle is 0.98. Constant is 40.82.

Solution: Check down the column of the table under "Oz. roving" to 10, and opposite this figure under column "Lb., Double End Fed" find 1.25. Two 10-oz. rovings weigh 1.25 lb., according to the table. Then, $1.25 \times 40.82 = 51.02$ hr., elapsed running time of the creeled roving.

Proof: Divide 0.98 lb. per spindle per 40 hr. into the pounds of roving from which it is drawn: $1.25 \div 0.98 = 1.2755$; quotient in weeks. 1.2755×40 hr. $= 51.02$ hr., elapsed running time.

Elapsed Running Time of Creeled Roving (Spinning)

(basis, 40 hr.)

Yarn	Standard Lb. per Sp.	Constant	Oz. Roving	Lb. Single End Fed	Lb. Double End Fed	Oz. Roving	Lb. Single End Fed	Lb. Double End Fed
10 Filing	3.50	11.43	5	0.3125	0.625	25	1.5625	3.125
13 "	3.10	12.91	6	0.3750	0.750	26	1.6250	3.250
20 "	1.70	23.53	7	0.4375	0.875	27	1.6875	3.375
25 "	1.35	29.63	8	0.5000	1.000	28	1.7500	3.500
32 "	0.98	40.82	9	0.5625	1.125	29	1.8125	3.625
35 "	0.92	43.48	10	0.6250	1.250	30	1.8750	3.750
16 Warp	1.85	21.62	11	0.6875	1.375	31	1.9375	3.875
20 "	1.55	25.81	12	0.7500	1.500	32	2.0000	4.000
24 "	1.30	30.77	13	0.8125	1.625	33	2.0625	4.125
28 "	0.95	42.11	14	0.8750	1.750	34	2.1250	4.250
35 "	0.85	47.06	15	0.9375	1.875	35	2.1875	4.375
42 "	0.55	72.73	16	1.0000	2.000	36	2.2500	4.500
			17	1.0625	2.125	37	2.3125	4.625
			18	1.1250	2.250	38	2.3750	4.750
			19	1.1875	2.375	39	2.4375	4.875
			20	1.2500	2.500	40	2.5000	5.000
			21	1.3125	2.625	41	2.5625	5.125
			22	1.3750	2.750	42	2.6250	5.250
			23	1.4375	2.875	43	2.6875	5.375
			24	1.5000	3.000	44	2.7500	5.500

$\frac{\text{Hr. per wk. (40)}}{\text{Lb. per sp.}} = \text{Constant}$

Constant × Pounds roving = Elapsed running time of creeled roving.

Directing Cotton MILITARY FABRICS into Civilian Markets

Balloon cloth is blossoming out in some of the current season's most attractive dresses. This polka-dotted version is an interesting variation of the coat dress.

HIGHLIGHTS:—Civilian Shortages and Further Military Requirement Likely to Lessen Impact of Reconversion—Plans for Quick Change-Over and Utilization of Yarns and Fabrics in Process Essential—Many Military and War Industry Fabrics Can Be Manufactured for Civilian Markets—Research to Sustain Use of Cotton Fabrics.

By THOMAS O. OTT, JR.
Southern Editor, TEXTILE WORLD

So far, there has been no serious problem in using fabrics released by the military procurement agencies in civilian fields. Fabrics such as the 8.2-oz. twill, the 8.5-oz. herringbone twill, the 5-oz. poplin, and the 6-oz. shirting can readily be used in the work- and sport-clothes fields. Recent cancellation of contracts for 6-oz. khaki shirting made it possible for the cutters to purchase this material from the Philadelphia Quartermaster Depot, according to Colonel Thomas W. Jones, director of procurement. The purpose of this arrangement is to enable shirt manufacturers to transfer more quickly to the production of work shirts for "industrial soldiers." Other fabrics will probably be released for civilian use from time to time, and the civilian market will also continue to use fabrics rejected by military procurement agencies. With shortages in civilian fabrics as well as in necessary military fabrics, however, there is every likelihood that widespread conversion of military fabrics to civilian use will not occur suddenly and will not therefore present too complicated a problem.

Numbered duck, tent duck, and a variety of drills, twills, sheeting, pillow tubing, silesia, towels, poplin, osnaburgs, webbing, leno netting, etc., will probably be absorbed readily in civilian and industrial markets. The most serious problem is the likelihood that large stores of certain fabrics will have a depressing effect on future manufacture of such items. This situation

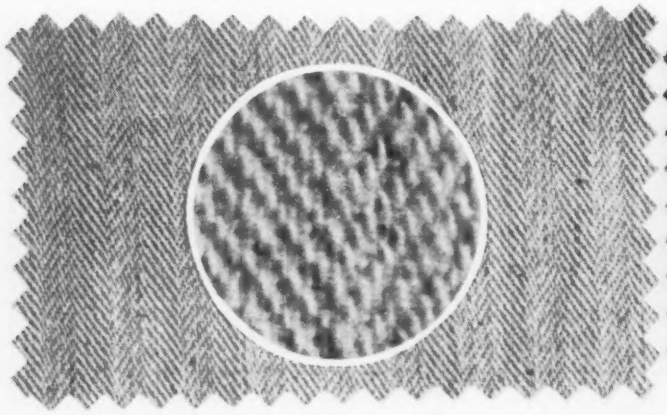


Fig. 1. The 8½-oz. herringbone twill can be held in the gray for dyeing in shades acceptable to civilian markets.

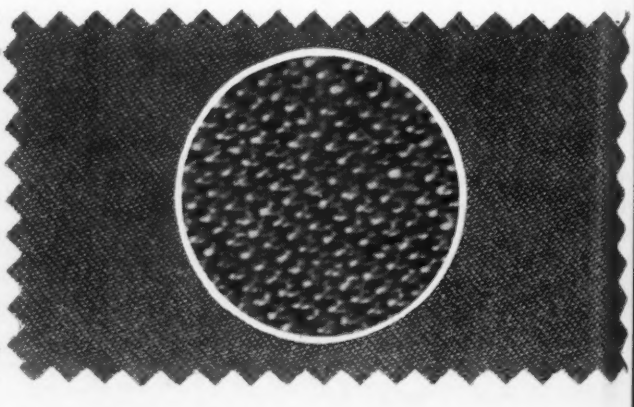


Fig. 2. The 6-oz. cotton twill recently released to civilian cutters for work shirts.

so far has not developed, due to heavy demands for military and other essential fabrics and to drops in production.

Because of the probable loss of a large segment of the tire-cord production of the cotton division of the industry to the rayon division, new cotton-textile products are badly needed to absorb the yarn formerly produced in these units. The consumer market on draperies, upholsteries, slip covers, automobile linings, etc., may not offer much encouragement to these producers, as these fields are fairly well taken care of by other mills normally, and new industrial fabrics must be developed perhaps for the building trade and other large potential users. The cotton-bagging business might be developed further.

CONVERSION POSSIBILITIES. If a mill finds large quantities of yarn on hand for the uniform twills, some of the yarns at least can be absorbed by sales to producers of drapery and upholstery fabrics. The 40/2 combed yarn for the wind-resistant poplin and the 36/2 and 24/2 for the 8.2-oz. uniform twill and 9-oz. sateen are all adaptable to upholstery, drapery, and cotton suitings. The 10 1/4s warp used for the 8.5 herringbone can be used in standard drills and twills; the 21s in the 6-oz. shirting can also be put in drills; twills, and coarse sheetings.

Warps already dressed on beams can be reeded out to other widths, the picks changed, and new constructions prepared for civilian markets. Waste can be reduced by obtaining acceptance of widths other than standard so all ends in warp can be utilized. Warps on the 6-oz. shirtings, the 8.2-oz. uniform cloth, and the 8.5-oz. herringbone twill can most likely be run out, as these fabrics will have continued military and civilian uses.

Grey goods on hand in the piece or roll may be held for special instructions as to dyeing or finishing to suit converters—unless, of course, the mill is assured that these goods will be taken by military procurement agencies. Many special fabrics such as the leno and marquisette for military use can also be readily used by civilian markets provided the colors are not too inharmonious, in which case these fabrics should probably be held for special dyeing contracts.

Fabrics at finishing plants and beyond recall, if thrown back on the mill, might eventually be absorbed by the military themselves. If not, there may be a loss in disposing of them, especially if large quantities of similar materials are put on the market by the surplus-property custodian or returned to this country as "reverse lend-lease."

Yarn mills which, as subcontractors, furnish large quantities of carded and combed yarns to the weaving trade and which supplement mills unable to produce full yarn requirements, may experience some difficulties with large slow-moving yarn inventories. Much can be done by all mills to prevent such conditions by prompt change of yarn organizations to standard civilian items as quickly as possible.

SITUATION HOPEFUL. The cotton-textile industry will probably experience less disruption in the overall changeover to civilian products than the majority of other industries. The fact that Japan is likely to be a problem for a couple of years after the defeat of Germany will allow a partial adjustment to come early which in all probability will cushion any shock. The chief concern of the cotton-textile industry is how to continue to produce at a high rate and at the same time retain home markets and gain export outlets for present capacity. Manufacturers have largely demonstrated their concern over this situation by the large number of research projects launched in the past two years. Research takes time and it is hoped that these projects will give the cotton manufacturer a firmer footing in home and foreign markets before too long.

RESEARCH AND NEW USES. Textile research by the Army and Navy, both secret and in conjunction with civilian industry, is developing a backlog of ideas and developments that can possibly offer mills numbers of new outlets for their production. More unity of research effort has been reported recently in the coordination of research information of the Army and Navy through the National Defense Research Committee of the Office of Scientific Research and Development, Washington, D. C. This information is largely secret and will not be released except when there is no further need of military secrecy. Over 300 research projects are in process at the present in every field except fuel and lubricants. Mills can look forward to continuing the manufacture in the postwar period of many of the new fabrics now going almost exclusively for military and essential wartime uses.

Dye inventories must be watched carefully so that no excessive amounts of dyes used only for military items will be left in the hands of dyers.

New fabrics such as the Shirley cloth, the 9-oz. sateen, the cotton barrage-balloon cloth, and many others are likely to open up new markets or change old ones. Further development of fabrics for specific uses is likely to be seen.

Knitted cotton underwear, made shrink-proof, and the Army's cushioned-sole hose will give new appeal to postwar civilian necessities.

Private and cooperative research is working out new uses and new products with cotton as the basic fiber. Also there is a trend toward the developing of more fabrics with blended combination yarns of cotton and rayon staple.

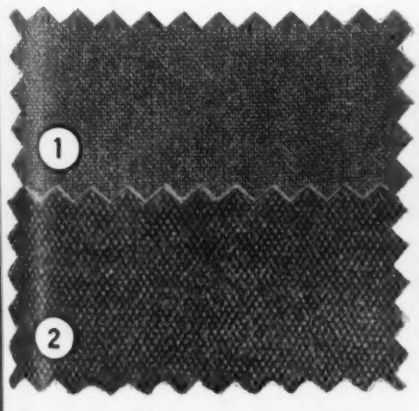


Fig. 3. (1) Shelter-tent duck and (2) numbered duck with proper finishes can be used in civilian markets.

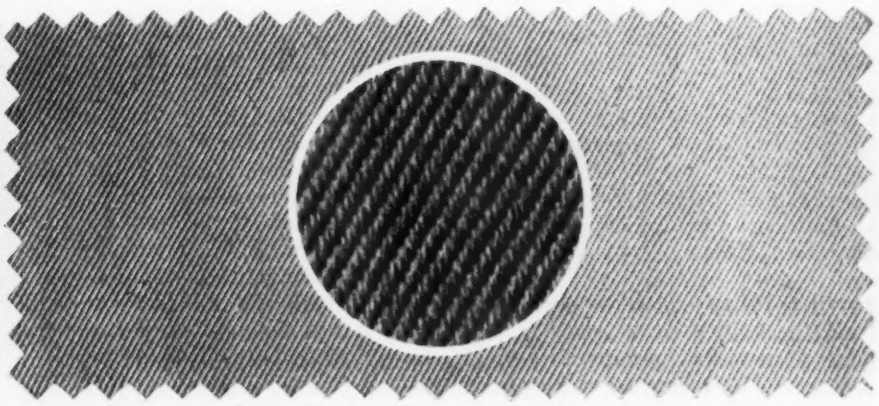
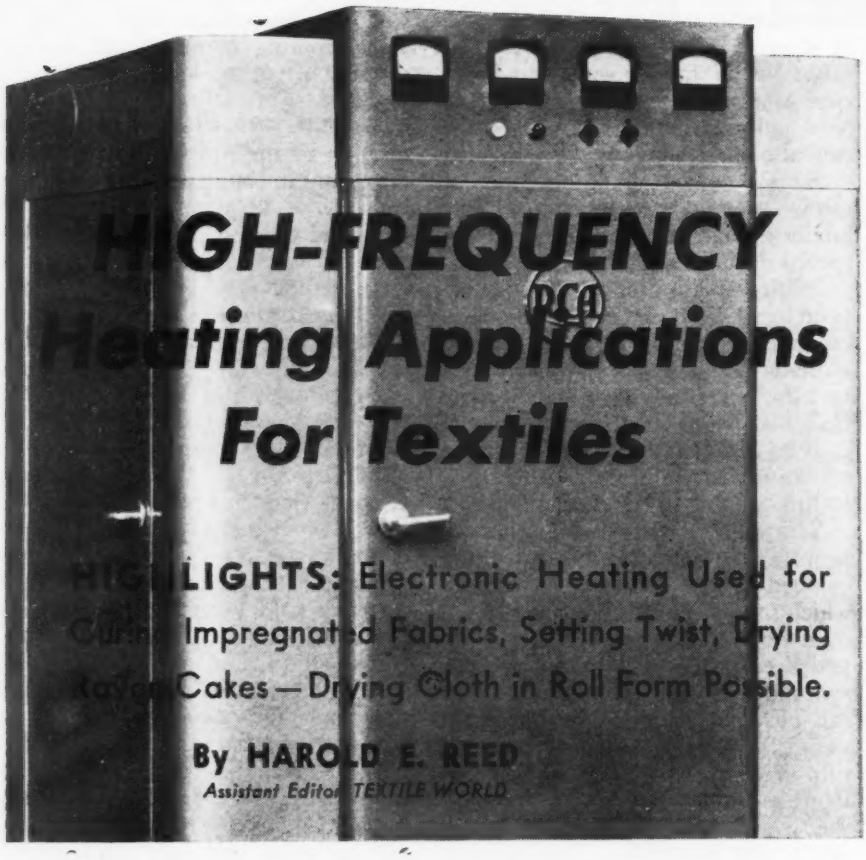


Fig. 4. The 9-oz. 5-harness sateen that will find many uses, such as in sport and work clothing.



TEXTILE MILL ENGINEERS and executives have, within the last few years, heard numerous reports and rumors of a new principle of heating or drying which is a cure-all for the industry. These stories have connected with them such words as "electronic" heating, "dielectric" heating, "induction" heating and "high-frequency" heating —all which are a mystery to the ordinary textile-mill man. Before going further, it is useful to clarify some of these terms.

ELECTRONICS DEFINED. In general, any control device, whether it be an instrument control, a motor control, a door-opener, or a device for straightening warps in a tenter, employs electronics if a vacuum tube or tubes, similar to those found in radios, are used. These tubes, by means of amplification, etc., control various electric circuits and may be made to operate relays and numerous other controls.

INDUCTION HEATING. Electronic heating, better known as high-frequency heating, employs vacuum tubes to generate current of high-frequency, which sets up a field of alternating

SETTING TWIST

INSTALLATION OF HIGH-FREQUENCY heating units by B. F. Goodrich Co. at the Martha Mills, Silvertown, Ga., and by the Luzerne Throwing Co., at Wilkes-Barre, Pa., has resulted in the setting of twist in large cones of rayon tire-yarn in a fraction of the time normally required by other methods. Also, greater uniformity of twist is obtained.

The electronic-power heating units, installed by R.C.A., Victor Division, Camden, N. J., are 15-kilowatt electronic power generators used with specially-engineered applicator equipment. A third unit of this type has been shipped by RCA for installation at Industrial Rayon Corp.'s plant at Cleveland, Ohio.

SETTING TWIST. Cones of rayon taken from the twister are wrapped in wax paper so as to form a fairly waterproof package. The cones are then placed in an inverted position by an operative, as shown in Fig. 1, on a wooden block attached to an endless conveyor belt. Each block has two holes drilled to permit the top of the cone projecting from the yarn-package to be inserted, thus holding the cone in place. Two cones are held by each block.

The conveyor belt, moving at a rate varying from 3 to 9 in. per min., carries the cones into a cage. In the cage the cones pass between a bottom plate, which with the cage constitutes the "cold" or ground electrode, and a top plate the hot electrode. Between these two electrodes exists the high-frequency electrical field which causes the moisture within the yarn on the cones to vaporize. However, the wax wrapping holds the moisture and in effect steams the yarn, thus setting the twist.

As the cones emerge from the cage, they are automatically dumped into a waiting truck, Fig. 2. The wax wrapping is not removed until the cones have reached room temperature.

DETAILS OF UNIT. An RCA model 15-B electronic power generator provides high-frequency power to its output lead which is connected to copper electrode plate placed above the 30-in. conveyor belt. This electrode is protected by the housing or cage that is about 8 ft. in length and covers part of the conveyor.

The bottom or "cold" electrode is a solid copper plate, whereas the top electrode, placed about one inch above the top of the cones, is a copper grid to prevent the condensation of moisture. Any moisture collecting on the top plate and dripping offers a possibility of arcing. The plates in most units average 10 to 20 sq.ft. in area.

Radio-frequency voltage across the load is of the order of 10,000 volts, and the temperature rise in the load is about 100° F., depending on the type of rayon.

The frequency between the plates ranges from 2 to 10 megacycles (2,000,000 to 10,000,000 cycles per second), and causes agitation of the molecules of the rayon, generating heat by means of molecular friction.

Protective devices are installed, such

magnetic flux. The magnetic field has then a pronounced effect on the molecules of various materials. When conductors of electricity are brought under the influence of these waves, an induced current is created in the conductor which causes it to heat. This is the form of high-frequency heating known as induction heating.

As textile materials are not conductors of electricity, textile-mill engineers have little interest in induction heating.

DIELECTRIC HEATING. If a nonconductor of electricity, such as rayon yarn or any textile material, is placed in a high-frequency field, the molecules of the fiber are affected in such a manner as to cause the fiber to heat. This type of high-frequency heating is known as dielectric heating.

In this discussion of high-frequency heating, reference will only be made to dielectric heating as it is the only type that concerns the textile industry.

ADVANTAGES OF HIGH-FREQUENCY HEATING. Many claims have been made for high-frequency heating, some fantastic and some sound. But this type of drying or heating will never totally replace steam for textiles. First, steam is more economical to use; and, second, many plants are using steam for this purpose today with completely satisfactory results.

However, when drying becomes a bottleneck through repeated handling or storage, or when steam cannot be used more efficiently, high-frequency heating may solve the problem. This type of heating generally works best where the drying problem involves the heating or drying of a mass. For example, any size cone or spool of yarn, or even a roll of cloth, may be dried uniformly throughout with a high-frequency unit. The setting of twist in rayon tire-cord, as described in the accompanying story, illustrates how high-frequency heating can solve a bottleneck, and at the same time produce a superior product.

One of the outstanding advantages of high-frequency is its ability to "dry from the inside out." Surface heating, as accomplished by steam and infra-red, dries the outside of a fabric or a cone first and then gradually dries the material in toward the center of its structure. High-frequency, on the other hand, radiates no heat. The only heat present in a high-frequency drying chamber is that given-off by the material being dried. Regardless of bulk or size of the material, every section of the material will be heated to the same degree. Hence, this process is often referred to as "inside out" drying. Practically no heat is wasted.

Installation costs of high-frequency units are high. But savings in actual drying time and in the elimination of auxiliary equipment may make the final operating cost well within reach of many mills. In one instance, it was found that it required about ten minutes to accomplish an operation using high-frequency, whereas ten to twelve hours were formerly required.

In general, it is possible to dry a roll of cloth of practically any size in roll form by electronic heating in not over ten minutes, provided sufficient power is used.

Frequently the addition of steam drying equipment, especially in rayon mills, may require the installation of additional boiler capacity or even the purchase of a boiler and accompanying

(Continued on page 166)

HIGHLIGHTS: Installation at Martha Mills Used for Rayon Tire Cord—Twist Setting Accomplished in Minutes—Uniformity of Twist Obtained.

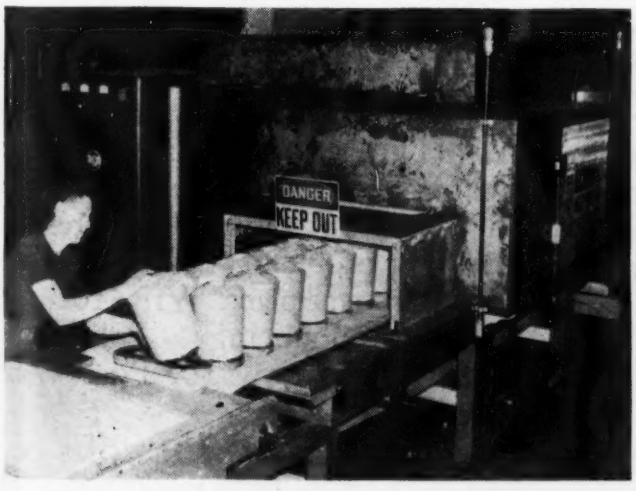


Fig. 1. Operative wraps each cone in wax paper to form waterproof enclosure and places cone on conveyor belt.

Photos courtesy of RCA and B. F. Goodrich Co.

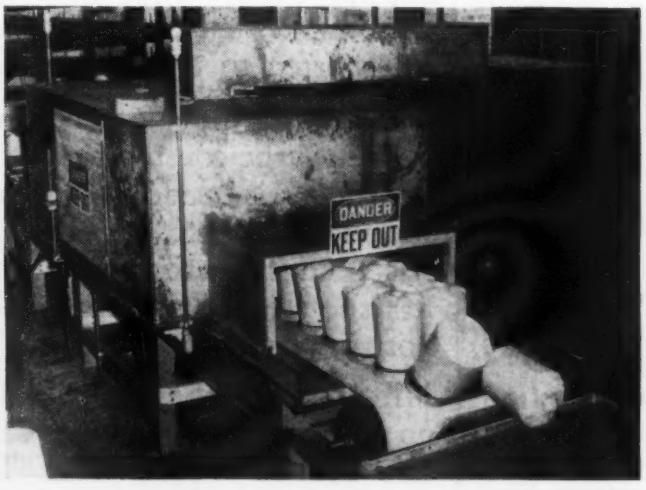
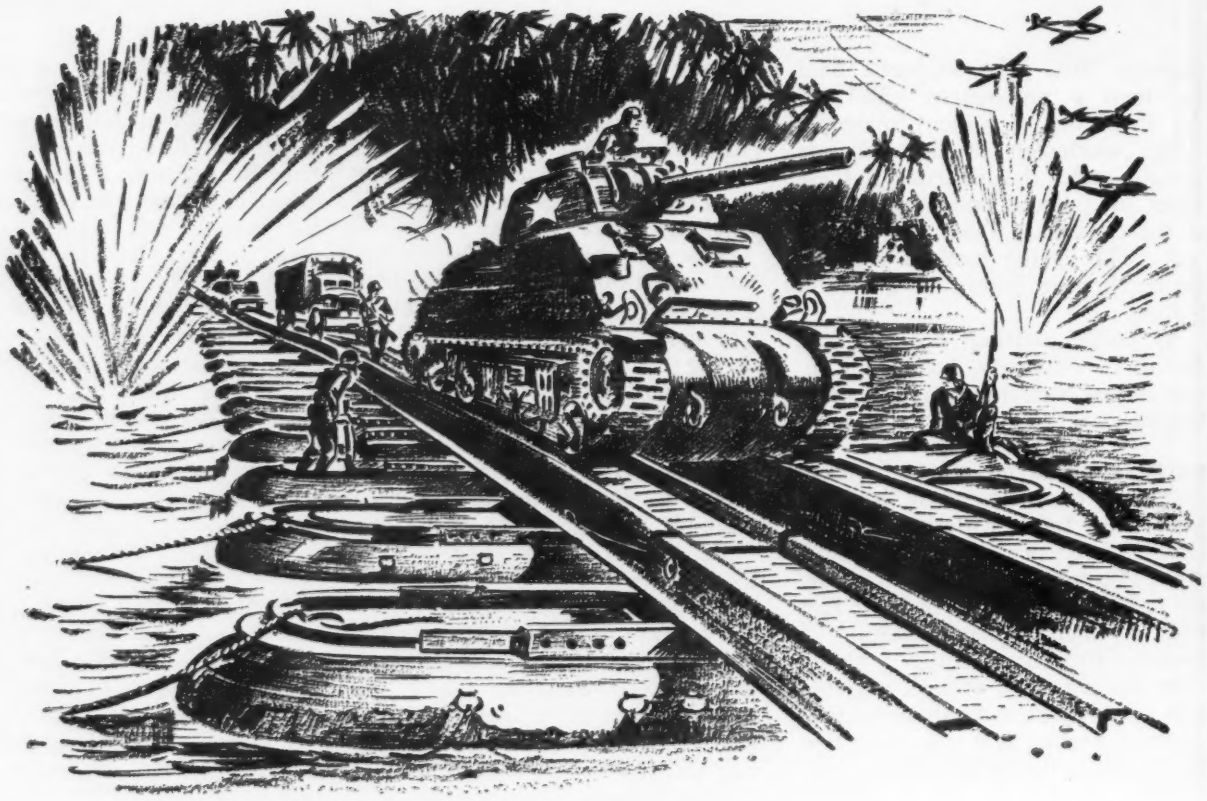


Fig. 2. End view shows cones being discharged into waiting truck. Wrapping is left on cones until they reach room temperature. Lead from generator is covered.

as a series of interlock door switches, and another switch which automatically grounds the high-voltage bus when the doors are open. All leads are protected to insure safety of the operative. Control may be entirely by a remote control station, if desired, which may be operated by the average employee.

Output of a twist-setter of the 15 kilowatt size runs about 18,000 to 25,000 lb. for a 24-hour day. Output of smaller size units is correspondingly less, these being available in ratings of 2 kilowatts and greater.



Cotton Helps an Army Advance

Bridges blown up by the enemy have not stopped our invading forces. Pontoons made of cotton are supporting bridges over which men, tanks and equipment can be transported to the fighting front.

The tough, durable fabric which goes into the construction of these pontoons, is made of a combed, heavily plied yarn. After the fabric has been rubberized, the material has the strength of steel and will not rip or tear.

Mills making these fabrics depend on Butterworth Machines at every step in the Wet End of Textile Finishing... bleaching, boiling-out, drying, calendering, dyeing.

Butterworth Engineers offer their cooperation to every mill seeking to achieve increased productive capacity . . . to repair or replace obsolete equipment... to develop new machines to meet special problems . . . to improve plant layout.

All of our facilities not required for Ordnance production are available to help you solve your present finishing problems, and aid you in your post war plans. Write for our folder "Announcing a Policy on orders taken now for Post War Delivery."

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of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

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PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

More Production from BETTER JOB METHODS

HIGHLIGHTS: Job Methods Training Open to Mills on War Contracts—Teach Foremen How to Think Out, Analyze, Improve, and Apply Better Methods — Textile Mills Use Service.

Job Methods Training offered by the Training Within Industry Division of the War Manpower Commission has been adopted by a number of mills to help maintain and improve production of military and essential wartime materials. Essentially it is a course in scientific management boiled down to the barest essentials and presented in a manner that allows the principles to be quickly learned and applied by the average supervisor. It is the second of a series of courses designed to improve production efficiency, the first being Job Instructor Training. These two courses are especially valuable to all mills afflicted with shortages of skilled help and poor utilization of present personnel, machinery, and equipment. The job instructor course deals with the proper method of quick training for skilled or semi-skilled jobs; while Job Methods Training, described herein, deals especially with proper methods for foremen and supervisors to use in improving methods of doing the jobs under their supervision.

FOREMEN are doing much today to get more production by making the job easier and safer as a result of Job Methods Training courses offered by the Training Within Industry Division of the War Manpower Commission. Many textile jobs have been improved by the fact that foremen receiving this instruction are encouraged to think about a job and examine it with the purpose in mind of getting more production with safer operation and without increasing the efforts of the operative. It is not a "speed-up" system, but is a simple and logical analysis of existing practices with a questioning attitude of mind and simplifying, improving, discarding, or rearranging detailed work routines and methods so that more production can be secured by making the best use of workers, materials, and equipment available.

WHAT IS JMT? The principles of job methods improvement set forth in the JMT training program have always been used in American industry. The present condensed plan was worked out by a group of the nation's leaders in industrial training, lent by their companies to the War Manpower Commission for this purpose.

The training is given to groups of plant supervisors in five two-hour sessions, at any periods convenient to the companies and those who attend. It is essential that those supervisors to whom the instruction is given have had Job Instructor Training. Best results are obtained in groups of twelve, because in larger groups there is not sufficient time for practice.

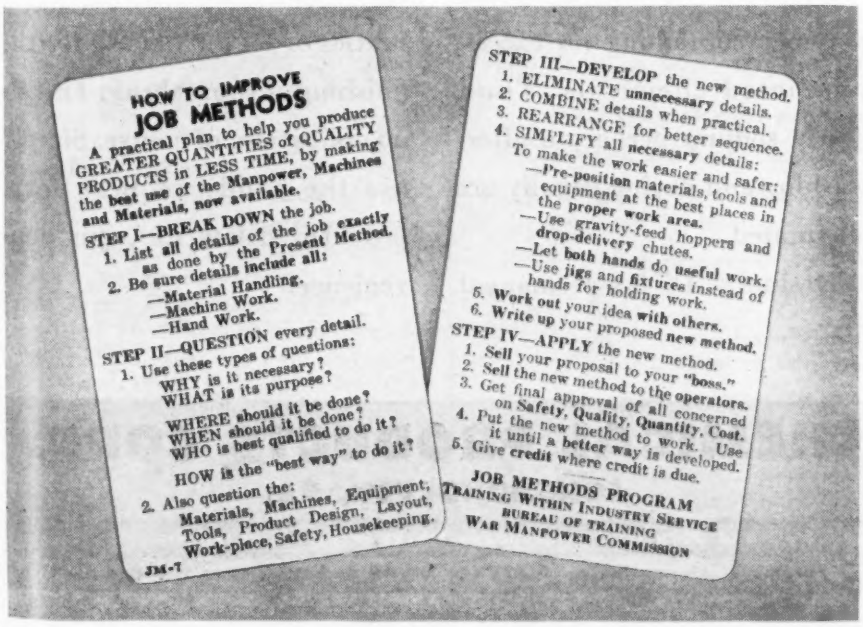
The five two-hour sessions are in most cases led by specially selected leaders, already in the employ of the plant, and such leaders are designated as War Production Trainers.

All War Production Trainers are especially prepared and coached to carry on the program. The instruction requires four days and will be conducted by a Training Within Industry representative without cost to the company, providing the company is a war contractor or sub-contractor.

To get started, all that is necessary is to notify the district representative of TWI or one of the district training consultants. Each company will be asked to designate a contact person with whom all schedules and details can be arranged.

THE PLAN. The Job Methods Training Plan, or How To Improve Job Methods, puts emphasis on getting the foreman to think, plan, and develop better ways to do the jobs under his supervision, utilizing the personnel, materials, machinery and equipment available now. Foremen are urged to examine and improve the hundreds of small things under their supervision and not to try to plan an entire new department.

The way improvements are made is of first importance. Foremen are asked to recall instances when he as a worker devised better ways of doing a job. He is asked to consider how he


HOW TO IMPROVE
JOB METHODS
A practical plan to help you produce GREATER QUANTITIES of QUALITY PRODUCTS in LESS TIME, by making the best use of the Manpower, Machines and Materials, now available.
STEP I—BREAK DOWN the job.
1. List all details of the job exactly as done by the Present Method.
2. Be sure details include all:
—Material Handling.
—Machine Work.
—Hand Work.
STEP II—QUESTION every detail.
1. Use these types of questions:
WHY is it necessary?
WHAT is its purpose?
WHERE should it be done?
WHEN should it be done?
WHO is best qualified to do it?
HOW is the "best way" to do it?
2. Also question the:
Materials, Machines, Equipment, Tools, Product Design, Layout, Work-place, Safety, Housekeeping.
JM-7
STEP III—DEVELOP the new method.
1. ELIMINATE unnecessary details.
2. COMBINE details when practical.
3. REARRANGE for better sequence.
4. SIMPLIFY all necessary details:
To make the work easier and safer:
—Pre-position materials, tools and equipment at the best places in the proper work area.
—Use gravity-feed hoppers and drop-delivery chutes.
—Let both hands do useful work.
—Use jigs and fixtures instead of hands for holding work.
5. Work out your idea with others.
6. Write up your proposed new method.
STEP IV—APPLY the new method.
1. Sell your proposal to your "boss."
2. Sell the new method to the operators.
3. Get final approval of all concerned on Safety, Quality, Quantity, Cost.
4. Put the new method to work. Use it until a better way is developed.
5. Give credit where credit is due.
JOB METHODS PROGRAM
TRAINING WITHIN INDUSTRY SERVICE
BUREAU OF TRAINING
WAR MANPOWER COMMISSION

The secret of the JMT is this small card which the foreman can always carry with him to serve as a reminder of the principles of job methods improvement.

WANT *Uniform, Controlled* FABRIC SHRINKAGE?

Most fabrics set to a residual shrinkage of less than 2%... without special equipment... by—

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Why let fabric shrinkage rob you of valuable yardage, when 50% to 75% of this processing loss can usually be prevented by finishing with QUAKER DIAPENE "U"?

This water-white, semi-viscous resin actually sets fabrics against shrinkage (less than 2% residual in most cases). Result: substantially less loss of yardage when fabrics are subjected to pre-shrinking processes as the final treatment. Goods finished with DIAPENE "U" may be pre-shrunk at much higher speeds than those not so finished.

DIAPENE "U" is a special polymer containing no excess, unreacted chemicals. Thus, costly sodium perborate after-washing and drying usually are eliminated.

DIAPENE "U" is a permanent finish, easily applied with equipment normally available in most finishing plants. Results are remarkably *uniform!*

A Quaker Process Engineer will gladly discuss with you the time- and money-saving possibilities of DIAPENE "U" for the finishing of your fabrics. There's no obligation, of course. Simply use the handy request form provided below for your convenience.

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found it hard to "swallow" a new method his boss sprang on him.

Then he is asked to recall his experiences as a supervisor—when the boss found a "bug" in the poorly worked out plan he presented and which resulted in his not proposing any more new ideas—when his well-prepared plan fell flat because he failed to ask for advice from fellow supervisors or an engineer—when the better way he worked out was put into effect and he enjoyed satisfaction from seeing it succeed.

After this introduction, the supervisor is given the details of how to improve job methods with explanations and demonstrations. The plan has four steps. All are of equal importance and none can be omitted. The foreman is lead easily from one step of the plan to another. The first step is a job breakdown, which is merely a listing of all the details of the job in order to learn more about them. The second step requires that he proceed to question each of these details. The third step is to develop the idea, and the fourth is to apply it.

RESULTS NOTED. One knitting mill has reported that on a job of preparing army cloth for a shrinkage test, the supervisor, by using JMT procedure, reduced the number of details from 32 to 22, with a saving of 38% in the time required to make a sample for testing.

In a warehouse using 6,000 employees in the operation of wrapping 100-lb. to 600-lb. rolls of duck, a JMT improvement resulted in a saving of 48% in man-hours—a reduction in the department affected of from 1,008 hours to 528 hours per 48-hr. week. The improvement also eliminated infection from handling and will effect an estimated annual saving of $300,000 in labor and material.

One mill has had two of its men take the Job Methods Training, and these will do the instructing in connection with the training program. They expect to get the classes organized in the very near future.

Another mill has adopted the JMT as a part of its regular training program and feels that it will be beneficial in normal times as well as for the duration.

Quite a number of larger mills have secured the JMT training after completing the first required course—Job Instructor Training. Job trainers, are much better instructors for having had this training on how to improve job methods.

One mill executive states that his organization has given JMT training to its supervisory personnel and to most

HOW TO IMPROVE JOB METHODS

There are four steps to follow. Not one can be omitted. No one step is more important than another.

STEP I. BREAK DOWN the job.

1. List all details of the job exactly as done by the present method.

2. Be sure details include all:

—material handling
—machine work
—hand work

Take any job—take the first one you see in your department and just "start right in"—jot down on a sheet of paper every detail as it happens. Do this right at the job. Don't try to do it back at your desk. You'll overlook something if you do. Don't be secretive or mysterious about it. Tell your workers what you are doing. Be frank and open about the listing of details.

STEP II. QUESTION every detail.

1. Use these types of question:
WHY is it necessary?
WHAT is its purpose?
WHERE should it be done?
WHEN should it be done?
WHO is best qualified to do it?
HOW is "the best way" to do it?

2. Also question the:
materials, machines, equipment, tools, product, design, layout, work place, safety, housekeeping.

Just start down your sheet of details. Start questioning each one—you won't get far, usually, until some improvements will occur to you. Perhaps a "BETTER WAY" will "flash" into your mind. Hold this new idea temporarily and question every detail on your list before you start to "dope out" the better way. If you stop to work your "flash," you may help only a part of the job and overlook a broader or more useful improvement.

STEP III. DEVELOP the new method.

1. ELIMINATE unnecessary details.

2. COMBINE details when practical.

3. REARRANGE details for better sequence.

4. SIMPLIFY all necessary details.
(a) Make the work easier and safer.
(b) Pre-position materials, tools, and equipment, at the best places in the proper work area.
(c) Use gravity-feed hoppers and drop-delivery chutes when practical.
(d) Let both hands do useful work.
(e) Use jigs and fixtures, instead of hands, for holding work.

5. Work out your idea with others.

6. Write up your proposed new method; eliminating unnecessary details prevents waste of material and manpower.

Combining and rearranging overcome "back tracking" and double handling. Simplifying makes the job easier and safer to do.

Be sure to get all those concerned "in on" your idea from the start. Don't work out the new method and "spring it" on your people.

This applies to your boss, your associates, and particularly to your workers.

The best way of all is to work out your idea with them.

Make them a part of it.

STEP IV. APPLY the new method.

1. Sell your proposal to the boss.

2. Sell the new method to the operators.

3. Get final approval of all concerned on safety, quality, quantity, and cost.

4. Put the new method to work. Use it until a better way is developed.

5. Give credit where credit is due.

The boss must be "sold" to get his approval for a trial run.

The operator may need to know more about it to give the new method a fair test.

The new method can yield increased production only after it's working.

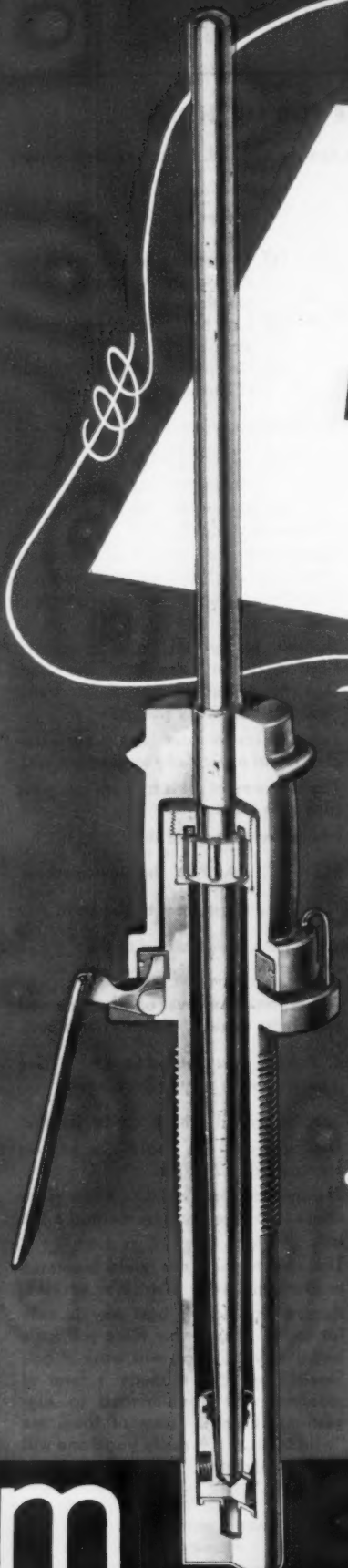
Remember, today's best way is only for today. Tomorrow there will be a better way and you will work it out! Stealing an idea is really a form of sabotage. Be open-minded to suggestions, even if many of them are "wild ideas." A really good one will come along that can contribute to victory.

Often a new method will "pop" into your mind without working through these FOUR STEPS. This is to be expected at the start. However, these "flashes" will soon be exhausted. Don't expect them to continue. For consistent improvement, you must think your way carefully through all of the FOUR STEPS. You will have to dig beneath the surface for most of your improvements.

Make the job easier and safer. Remember, your purpose is to make jobs easier and safer, not to make people work harder or faster. This is not a speed-up plan. It is to show people how to work more effectively. Keep this basic purpose clearly in mind and you can't fail. Furthermore, you will find "improving job methods" is an interesting undertaking. Most important of all is the fact that you will contribute to VICTORY!

Marquette

ROLLER BEARING SPINDLES



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key employees below supervisory level, such as loomfixers and section men. Some of the operatives have also taken the course, making a total of approximately 200 (10%) of the employees with this training. The company feels that JMT is definitely worth while in that it has focused the attention of the supervisors upon cost reduction by improving methods and eliminating wasted time, energy, and materials.

More concretely, he gives credit to JMT for stimulating the origination, among other things, of a stitching-machine stop motion, an improved method of inserting lap pins in picker laps, the elimination of considerable waste in draining slashers, and an improvement in the construction of doff boxes. It may also be interesting to note that the mill has received one suggestion of a patentable nature that has to do with the parallel mechanism of looms. He says, "This improvement, for which a patent is now pending, will not only save us money but should prove of value to the industry generally. JMT is entitled to full credit for stimulating the creation of this idea."

Still another mill man evaluates all three courses—Job Instructor Training (TEXTILE WORLD, July, 1943), Job Methods Training, and Job Relations Training (TEXTILE WORLD, April, 1944)—as being important as a unit, any one of them being incomplete without the other two. The first of these courses teaches the foreman the correct method of training employees; the second teaches the foreman the way to break down new jobs, eliminating waste of time and materials as well as separating the skilled from the unskilled part of the job; and the third teaches him job relations, giving him some idea of the value of getting results through people.

He feels that his mill has been amply repaid for the time and cost of getting these courses across to the foreman. By the time the foreman has mastered the courses and put them into practice, he has a broader view of his own job as well as management's job; therefore, he is a much broader, better-qualified man for a key job.

MECHANICAL DRIVE Rejuvenated for Heavier Load

HIGHLIGHTS: Carter Mills Install Roller Bearings on Main Drive from Diesel — Investment Pays in Increased Production.

A. W. Taylor, master mechanic, and George Woolley, Dodge Mfg. Corp., inspect a Dodge-Timken special-duty pillow block installed on the main shaft. Two of these main bearings, each 6 in. in dia. are in use. *Photo courtesy of Dodge Mfg. Corp.*

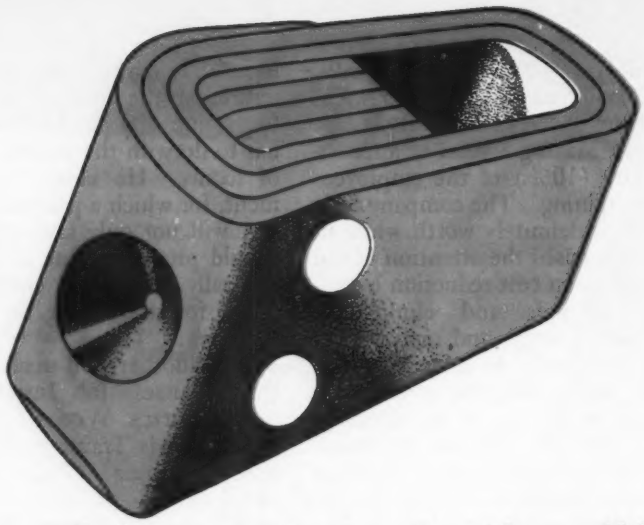
FOUR YEARS AGO Carter Mills, Lincolnton, N. C., a division of A. B. Carter, Inc., Gastonia, N. C., planned for the installation of additional spinning and yarn-preparation machinery. Power for the mill was supplied by a 600-hp. diesel engine which was already loaded to the point where it was not deemed advisable to add increased power demands brought about by the new equipment. This engine, manufactured by the Buckeye Machine Co., is an 8-cylinder, 13½-in. bore, 18-in. stroke, operating with an exhaust temperature of 690° F. In addition to the mill load, the engine drove a lighting generator which required 60 hp.

A separate unit, an additional 150-hp. Buckeye, was then installed to handle the generator load, relieving the main engine to this extent. But since the additional machinery load would require 110 hp., additional savings in power were required. The friction load on the engine was investigated and was found to be approximately 85 hp. This offered a simple solution to the problem. Dodge-Timken bearings were installed on the main shafting throughout the mill.

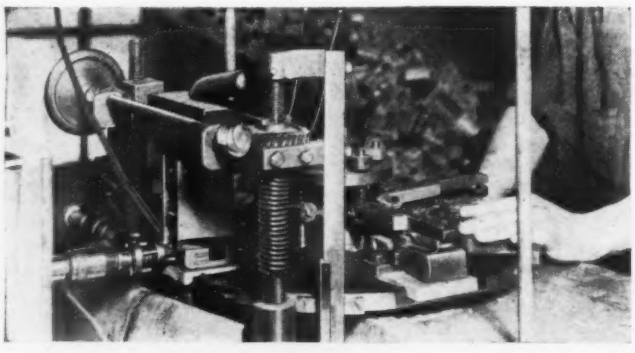
Additional machinery consisting of ten cards, ten spinning frames of 216 spindles each, three slubbers, and four intermediate frames were added; and under the new set-up the engine was found to be operating at 75 to 80% full load, with exhaust temperature reduced from 690° to 580° F.

BEARING CARE. Maintenance on these bearings presents no problem. Regular inspection is provided, such as given all mechanical equipment throughout the mill. The two large bearings at the main drive are oiled every 6 mo., and the other main-line bearings every 3 mo. No repair parts have been required and no shut-downs have resulted from the installation. A. D. Carter, president of the mill, states that the bearing installation paid for itself in the first year in power savings alone, as well as doing away with lost time occasioned by frequent shut-downs necessary in re-babbitting the old-type bearings. It also saved the mill a considerable investment for an additional power-unit which would otherwise have been necessary.

THE orange-colored PICKMASTER picker gives you these advantages: (1) pre-bored, scientifically sized and located hole that distributes shock evenly, lengthening life; (2) "balanced-head" construction, aligning the loop with the center of the face, preventing twisting; (3) G&K's exclusive "Hairitan" leather, providing a firm and stretchless collar and withstanding longer the shock of the shuttle.

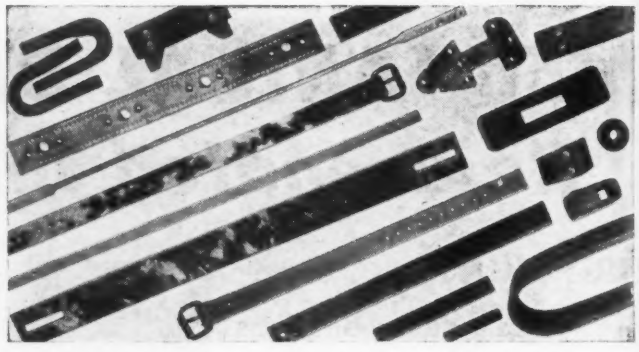


ORANGE is the sign of longer-loom leather life



You are assured of longer life with Graton & Knight's ORANGE LINE Loom Leathers because each product is tanned and finished under one roof, under one control of quality.

Selection is made from a wide assortment of raw stock for specific loom requirements . . . fabrication is by precision methods. Above, pickers are trimmed and pre-bored to close tolerances.



The orange color identifies Graton & Knight's "Hairitan" — a special hair-on tannage which develops such qualities as low stretch, resiliency, high tensile strength (averaging over 6500 lbs.), long life. "Hairitan" has proved to be the equal of any "European-type" hair-on tannage — and has won widespread satisfaction since those "European-type" leathers went off the market.

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One Quality Control from Hide to Loom

PICKMASTER PICKERS with the famous "Life Saver" hole

BLOCK PICKERS extra-resilient, cemented under pressure

"TWO-FOLD" CHECK STRAPS straight or endless

JACK & FLAT HARNESS STRAPS for heavy duty work

ROUND HARNESS & DOBBY STRAPS center-stock "Hairitan"

LUG STRAPS 4 or 5 ply folded, stitched; 2 or 3 ply, cemented

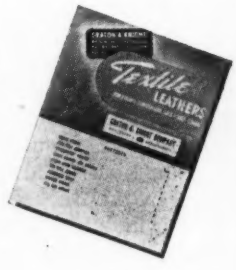
LUG HOLD-UP STRAPS . . . BUMPER OR SPINDLE STRAPS 1 or 2 ply

All "Hairitan" products are identified by orange color on the flesh side.

Graton & Knight also manufacture oak-tanned pickers, lug straps, bunters, box plate and binder leathers . . . "Research" rub roll aprons . . . G&K condenser tapes . . . G&K comber and gill box aprons . . . "Research" leather belting.

Make sure you are getting the best results from every one of your leather loom products. Send for valuable catalog on G&K leather products for textile mill uses. Also ask to receive, regularly, informative literature on loom leathers.

Address Graton & Knight Company, 326 Franklin Street, Worcester 4, Mass.



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COTTON SLASHER Care Will Improve Weaving

HIGHLIGHTS: Machines Deserve More Attention—Specific Schedule of Inspection and Upkeep by Shifts, Sets, Weeks, and Months Should Be Followed.

By THOMAS O. OTT, JR.
Southern Editor, TEXTILE WORLD

IT IS SURPRISING that in some mills in which as much as 60% of the yarn goes through cotton slashers, supervisors give less attention to their slashers than to many other machines. Good overseers of weaving pay a great deal of attention to the condition of their slashing equipment, as well as to the yarn going on and coming off the slashers. In fact, only by keeping the slashers in the best overall condition can good warps be secured.

A slasher in continuous 24-hr. operation, five or six days a week, gives better results than one that is stopped on second or third shift, even if fewer slashers need to be run.

Schedules for cleaning, lubricating, and adjusting the slasher and all its component assemblies can assure a busy overseer better operation of the machinery by the employees. Schedules similar to the accompanying table, will, when adhered to, improve weaving and reduce cost.

MAINTENANCE HINTS. For general upkeep of the slasher, the following suggestions are worth following:

1. *Creel*—Line and level creel as often as necessary to keep section beams running true with minimum wear on beam journals. Regulate ropes and weights, brakes, and other friction devices to reduce wear on section-beam heads to a minimum. Replace badly worn or damaged beam stands and bearings.
2. *Section Beams*—Examine journals and beam heads regularly. Mark "shop" on the beam that is showing signs of wear or need for realigning and repair, and pull out of production as soon as practical.
3. *Squeeze Rolls*—Keep spare rolls on hand, cleaned, painted, and covered with cotton-fabric cushion material, such as heavy sheeting or light duck, so that they can be put into production when needed. Put freshly covered rolls at back of size box, and move back roll to front to serve as the finishing roll. On old slashers, watch squeeze-roll journals and stands for alignment and wear. Have worn journal built up with bronze by the shop. Modern squeeze-roll arrangements with anti-friction bearings do not require this attention and should be lubricated as suggested by the manufacturers.
4. *Cylinders*—Keep the tie rods, gear segments, and manhole covers tight. See that drive gears mesh properly on segments and at size box. Do not attempt to clean copper cylinders, as this can cause damage if improperly done. Dents in cylinders should be removed by specialists in this type of work, usually outside the organization. Keep packing rim on cylinder bearings tight to prevent steam losses.
5. *Calender Roll*—The amount of cloth on the calender roll at front of slasher must be regulated according to the yarn number to get the proper

SLASHER MAINTENANCE SCHEDULE

EVERY SHIFT:

1. Clean out size box thoroughly.
2. Remove caked size from edge of box and squeeze rolls.
3. Brush off cylinders, hoods, pipe, frame, creel, and front end.
4. If anti-friction bearings are not used on cylinder, lubricate with grease that does not break down because of steam. Grease anti-friction bearings as recommended by bearing manufacturers.
5. Put a few drops of oil in all plain bearings.

EVERY SET:

1. Wash off each size roll with hose.
2. Clean out size box thoroughly.
3. Wash size kettle with hot water and run hot water through pump and circulating system.
4. Blow live steam through lines of circulating system if size is sluggish.
5. Tighten up pump if leaking from joints or packing.
6. Check tension just ahead of calender roll at start of set and be sure cloth on roll is smooth.
7. Check friction for wear and lubricate with graphite.
8. Check press roll and trucks for alignment. Lubricate.
9. Check bearings on size rolls for wear if anti-friction bearings are used, and grease as recommended by bearing manufacturer.
10. Check for wear on squeeze-roll journals and apply small amount of grease with finger.

EVERY WEEK-END:

1. Boil out size kettles with kerosene or sal soda and run through circulating system. Blow out with live steam.
2. Give slasher good, general cleaning. Brush down creel and cylinders and front. Blow out hood.
3. Put squeeze roll upon stands, unroll 1 to 2 yd. of each blanket, and wash, with hose.
4. Check all steam lines, valves, and traps for operation or leaks. Have shop do repair work on week-end. Repair buckets if cylinder is loading. This can be noted by fact that cylinder temperature cannot be kept.

EVERY MONTH:

1. Check all control instruments with standard stem calibrating thermometer.
2. Check head-end rolls and frame, cylinder, cylinder frame, and creel for alignment; align and level if necessary.
3. Check cylinder for dents or bulges. If buckets are used instead of siphon, inspect condition.

EVERY 3 TO 6 MONTHS:

1. Put on new blankets every 3 to 6 months, or more often when needed.
2. Keep spare squeeze roll painted with white lead and covered with medium cotton duck and/or sheeting.
3. When spare squeeze roll is used, put it on back of size box and then repaint and cover old roll with fresh material.

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tension and stretch. A wide range of numbers requires some adjustment. Put on or take off cloth evenly, avoiding creased and uneven places.

6. *Press Rolls*—Keep press rolls smooth and polished and see that the expansion heads work properly.

7. *Press-Roll Trucks*—If ball-bearing trucks and adjustable truck arms are not used, then regular attention must be given to the trucks to reduce wear and keep the beams concentric.

8. *Friction Head*—Observe operation of friction head when running large beams. The load on the friction head may be too heavy, causing excessive wear. A double friction head may be required to get firm beams and reduce wear and heating up of the head. See that beam load is not pulling friction out of alignment, thus causing additional wear and strain on equipment.

9. *Size Kettles*—The most important factors in securing good size are the cleaning of the kettles and the control of temperature. Proper insulation of storage kettles and control of temperature must be had. Boiling out kettles to loosen caked size and blowing out of size circulating system must be thoroughly done at regular intervals. Connection of a live steam line near the delivery end of the size pump allows the lines to be blown out whenever necessary. If the size preparation, storage, and circulating systems are kept in continuous use, less trouble should be had with lumpy size, providing, of course, the size is made up properly. Pumps and kettles must be kept clean outside as well as inside. Good housekeeping in the size room reduces complaints, loss of production, and badly executed slashing.

10. *Temperature Controls*—Don't allow just anyone to adjust temperature and time-temperature-cycle controls or these instruments will never give the best results. Because of the comparatively large number of control instruments on the slasher, one man on each shift, probably the plant engineer and assistants or the humidifier men, should study and handle these controls on a definite schedule. Such specialists can arrange for tests on yarn moisture content, calibration of all instruments, etc., and study the charts and make recommendations to the superintendent. Instrument companies are generally willing to cooperate in training such men for care of their instruments. Repair work and calibration are usually a factory job and require spare instruments at the mill.

WIRE-CORD TIRES Under Experiment

By JOHN JOHNSTON
McGraw-Hill Cleveland News Bureau

HIGHLIGHTS: Improved Rubber Adherence Gives Impetus—Probably Limited to High Pressures and Low Speeds at Present.

RESEARCH on the use of wire-cord to replace textiles in automotive tires is being conducted by several rubber companies with a degree of success which prompts technicians to forecast some postwar development of that construction, although high comparative costs seem likely to prevent any widespread use.

The principle is not new, having been pioneered in France by Michelin tire engineers more than a decade ago. A few of these tires were sold in the United States, but they were never widely adopted. Recent improvements in rubber-to-metal adhesives, however, has given the method fresh impetus.

Wartime rubber problems spurred intensive experiments with wire-cord tires in the hope that they might produce a lighter tire with great bursting strength, and bring a saving in rubber and tire-building equipment.

Conclusions from fabrication and testing experience are still shrouded in censorship, but it is apparent that not all of the hoped-for results were obtained. They were, however, impressive enough to cause designers to predict future application in limited fields.

Vehicles such as those used in logging operations, where tires encounter high pressures and low speeds, are considered a typical possibility for wire-cord tires. Indications are that such uses would comprise but a small fraction of the country's tire output. For ordinary passenger- and commercial-car use, the wire-tire cost is so high, as compared with textiles, that three or four times longer service would be required to make them economically practicable. Wire has produced no such promise.

All of the major Akron companies have built tires with metal. Details of construction vary, but in general they have employed steel wire of about .006 inches in thickness, twisted into a three-by-seven-strand cable. This is coated with brass, high in zinc, to prevent corrosion and because that alloy has been found to form the strongest bond with rubber. A close layer of wire cable is wound around a rubber core over a cylindrical drum, then embedded with a second layer of rubber.

A tire-ply is then bias-cut from this sheet, with the transverse wires at an angle of about 45°. Designers say that two such plies impart a bursting strength equal to about six fabric plies.

Among the speculative possibilities of the wire-cord tires were their use on aircraft, where weight is an important factor. It is understood, however, that tests were unsatisfactory because the high degree of flexing—up to 35% —to which the tire is subjected by landing shock, further decreased the low fatigue-life which is the wire tire's major disadvantage as compared with those built with textiles.

Another urge behind the wire-cord experiments was the possibility that their use in heavy-duty truck and bus tires would overcome the problem of internal heat which causes such tires, when built of synthetic rubber, to deteriorate rapidly. Tire engineers consider 250° F. the critical temperature for fabrics, while for rubber it is 300 to 350°. Again, however, low fatigue-life was the insurmountable handicap of the wire tire.

The new glass fabrics were also tested hopefully in this connection. Their resistance to heat, of course, was all that could be desired, and they had ample tensile strength; but inelasticity caused their rejection.

Obviously, wire-working machinery has not been available for any large-scale building of wire tires, even had experience made this procedure seem desirable.

It is possible, of course, that reduction in the cost of fine-drawn wire might shift the economic balance between wire and fabric tires. But until it does, rubber technicians are agreed that the wire tires cannot compete, and will remain of limited application and experimental interest.

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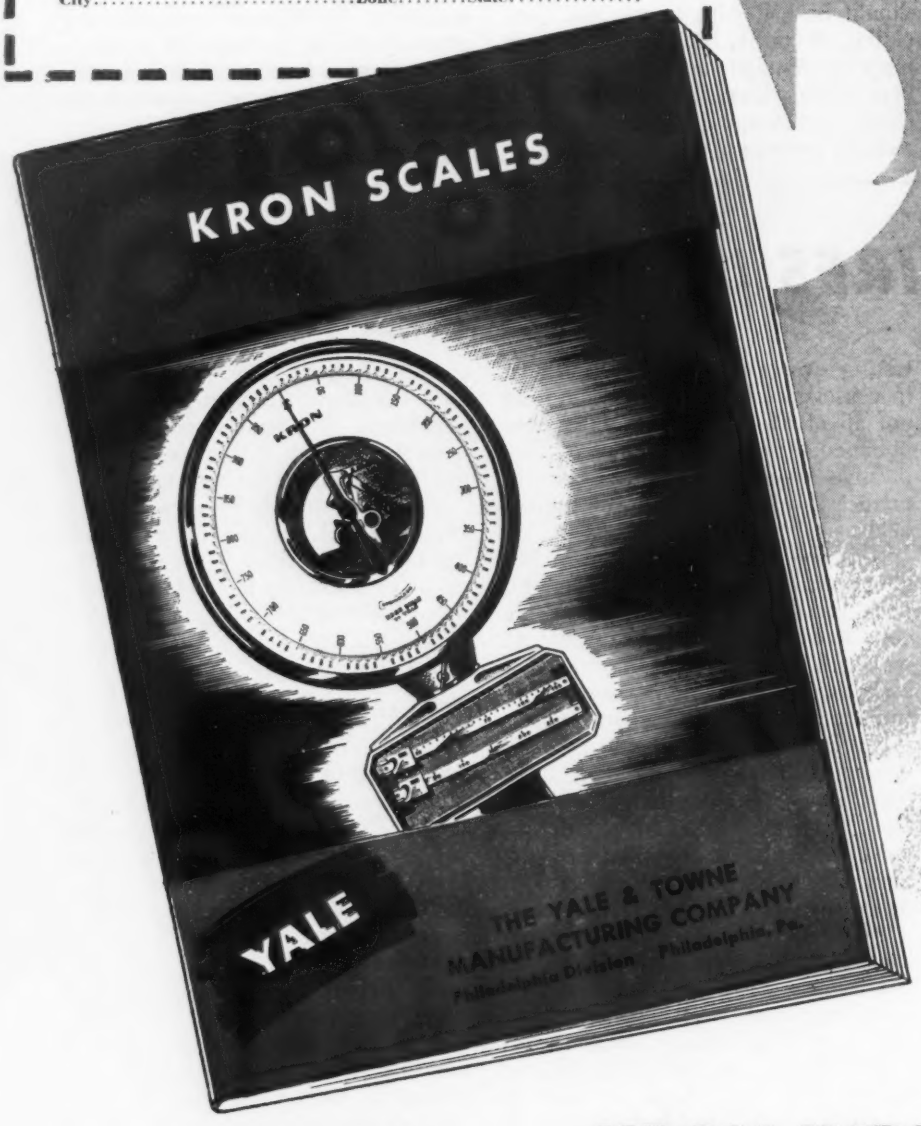

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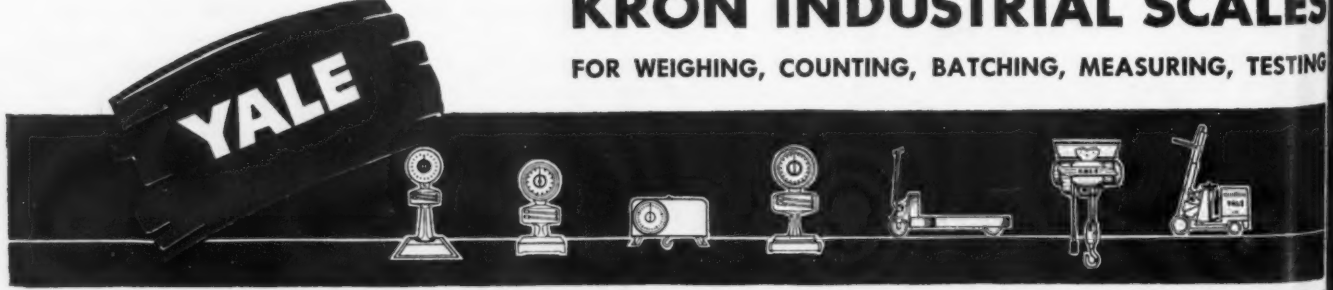

MATERIALS HANDLING MACHINERY: TRUCKS — HAND-LIFT AND ELECTRIC • HOISTS — HAND AND ELECTRIC

SURFACE-ACTIVE Agents Are Chemical Achievement

HIGHLIGHTS: Many Finishing Processes Depend on Anionic, Cationic, and Non-Ionic Compounds—Molecules Consist of Hydrophobe and Hydrophile.

By Dr. HUGH H. MOSHER
Director of Technical Research, Onyx Oil & Chemical Co. Jersey City, N. J.

ONE OF THE outstanding achievements of the chemical industry during the past decade has been the development of new classes of synthetics, usually grouped under the name of surface-active compounds. These include the diverse wetting, penetrating, emulsifying and dispersing agents, which have done so much to revolutionize all wet-processing operations.

The value of surface-active agents in wet-processing can scarcely be over estimated. Hardly an operation exists which would not, in many ways, be benefited by the addition of a suitable surface-active auxiliary.

In general, surface-active agents are complex organic compounds. Their molecules are distinct in the field of chemistry by virtue of the complexity of their structures. Every radical or chain that comprises the molecular configuration imparts to the molecule many of its inherent characteristics. This is in sharp contrast to most inorganic compounds. A union of sodium hydroxide and hydrochloric acid, to form sodium chloride and water, results in a salt formation that shows scarcely a trace of the properties of the salt precursors. Organic compounds, on the other hand, usually possess the physical and, often times, even the chemical properties of each component radical or group.

Surface-active compounds are composed of two essential moieties, or parts. One part of the molecule is called a hydrophobe. This part is water repellent and tends to leave the water in which it is dissolved and attach itself to oil or a non-polar molecule; the other part of the molecule is water-soluble and draws the molecule into solution. This water-soluble portion is termed a hydrophile.

It is to this peculiar chemical blend of totally different types of radicals that surface-active compounds owe their activity. One terminal of the compound (hydrophobe) tends to dissolve in any oil, non-polar colloid, or particle, with which it comes into contact; the other end (hydrophile) tends to convey not only the hydrophobe, but also all hydrophobic attachments into solution.

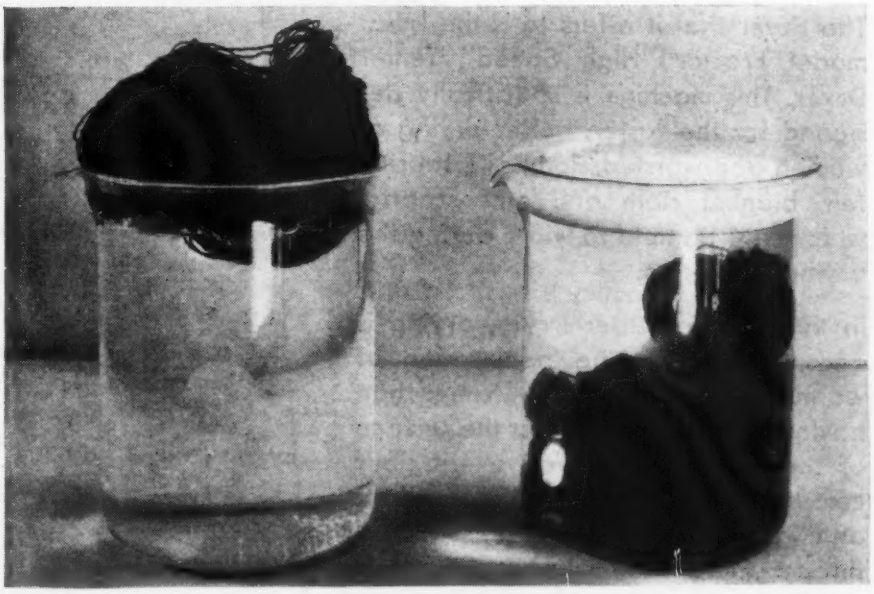

Fig. 1. The sinking test on dyed woolen skeins at the end of 10 sec. Beaker at left contains distilled water; beaker at right, 1/10 of 1% surface-active agent.

HYDROPHOBIC STRUCTURES. In many respects, the hydrophobic moiety of a surface-active compound acts on non-polar colloids and particles in aqueous suspension in much the same way that lubricating oils protect metallic parts. The hydrophobe envelops all surfaces that it can wet, with a thin sheath of considerable film strength. Such films exhibit great resistance to removal and possess an affinity for the same types of colloids. It is not surprising that those chemical structures which constitute our most approved mineral oils frequently serve likewise as the nuclei for the hydrophobe.

HYDROPHILIC RADICALS. There are many radicals theoretically serviceable for attachment to the hydrophobe to produce solubility. Practically, only a few have received commercial utilization. These include the carboxyl (COOH), the sulphate (SO_4), sulfonate (SO_3), and the phosphate (PO_4) groups; also various amide and amine-sulphate radicals, as well as polyhydric alcohols, polyglycols, tertiary and quaternary-nitrogen groups and atoms. The hydrophilic group acts as the carrier for the hydrophobe, thereby promoting solution solubility.

Each of the moieties of the compound imparts its own particular properties to the auxiliaries, and the degree of its surface-activity depends upon the ratio of the potency of hydrophilic to hydrophobic constituents. This ratio, or balance, is markedly affected by the nature of these antagonistic groups and their relative positions in the molecule. Advantage is taken of these factors to formulate products for specific purposes. Neither group should greatly predominate; too potent a hydrophobe, in respect to the hydrophile, results in the production of a chemical of such low solubility that

Airedale Mills Praise Performance and Efficiency of
PROCTOR TENTER DRYER

The letter reproduced at the right from the Airedale Worsted Mills, Inc. speaks for itself.

The dryer that it refers to is the latest model Proctor "High Speed" Tenter Dryer. This machine is specifically designed for the faster, better drying of woolen and worsted cloth, pile fabrics, felt, blanket cloth and other fabrics which must be held to width during the drying operation.

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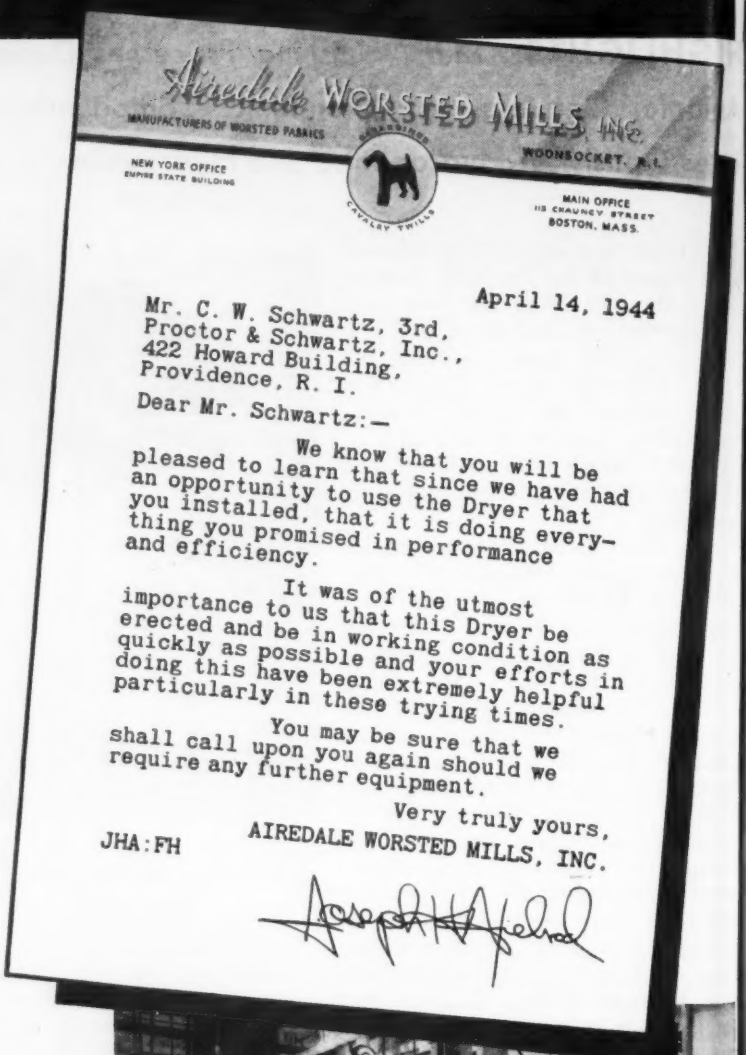

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BOSTON, MASS.

April 14, 1944

Mr. C. W. Schwartz, 3rd,
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You may be sure that we shall call upon you again should we require any further equipment.

Very truly yours,
AIREDALE WORSTED MILLS, INC.

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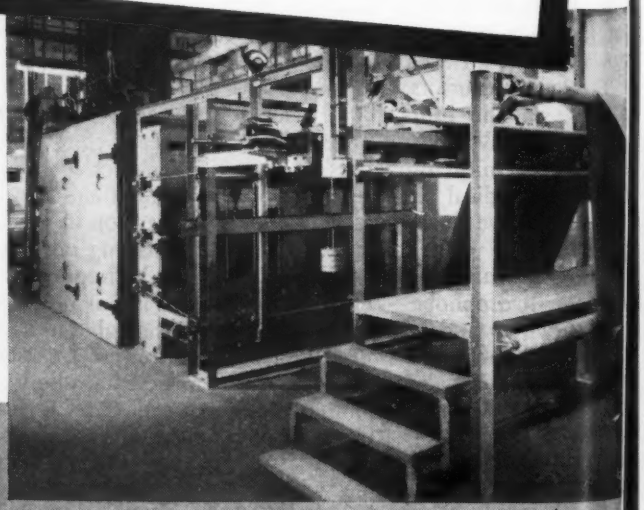


PROCTOR
TEXTILE DRYERS

manufactured by

PROCTOR & SCHWARTZ, Inc., Philadelphia, Pa.

Fig. 2. The sinking test on raw cotton skeins at the end of 10 sec. Beaker at left contains distilled water; beaker at right, 1/10 of 1% surface-active agent.

it is valueless for most industrial purposes. Conversely, too potent a hydrophile overwhelms the hydrophobe and inhibits its usefulness.

A slight excess of hydrophile over hydrophobe is required to produce the more potent wetting and penetrating agents. Where the influence of the latter predominates, the resultant product possesses a superior softening action on textiles and paper fabrications, as well as better lubricating and emulsifying properties; where as superior detergency results from a more exact balance of the two groups.

Until a few decades ago, scientists and industrials had recourse to a single surface-active compound—soap. It is a good detergent and a fair wetting and penetrating agent. Chemically, it may be considered to be a long chain mineral oil, to the terminal of which a carboxyl radical is attached represented by the formula R COO Na. The R denotes an alkyl chain from twelve to eighteen carbon atoms in length.

The soaps, however, possess certain inherent defects, and these restrict them to a very limited field of usefulness. They are stable only in fairly alkaline solutions; they form insoluble residues with heavy metallic salts or with the elements of hardness in many commercial waters; and they do not contain the most efficient type of hydrophile. Most of the studies concerning the development of newer surface-active compounds have involved means of obviating the inherent defects of soap by substituting more potent and effective hydrophiles for the carboxyl radical of soap.

A considerable number of hydrophiles have been developed. Probably the radical of greatest industrial importance has been the sulfate group. This may be introduced in the middle or on the terminal end of the aliphatic chain, and such compounds constitute the sulphated oils and fatty alcohol sulfates, respectively, of commerce.

These products may be represented by the following formulas:

$$(CH_3(CH_2)_6CHOSO_3HCH_2(CH_2)_6COOH$$

Sulfate oil

$$(CH_3(CH_2)_{14}CH_2OSO_3Na.$$

Fatty alcohol sulfate.

It will be observed that the foregoing compounds are quite similar chemically and differ chiefly in that the radical is more potent when attached in the terminal position than when inserted as a side chain in the middle of the molecule.

Many other types of hydrophiles have within the past few years made their industrial appearance and have achieved widespread application. Radicals bearing such names as acid-amide sulfates ($CONH_2OSO_3Na$), phosphates (PO_4), phenyl and diphenyl sulfonates ($C_6H_5SO_3Na$ and $C_{12}H_{10}SO_3Na$), sulphonates (SO_3), polyhydric alcohol and ether sulphates, polyglycol, and tertiary and quaternary nitrogen compounds are receiving commercial utilization. Some of these hydrophiles impart very unique characteristics and unsuspected properties to the auxiliary.

IONIZATION. Most inorganic and many organic compounds, when present in aqueous solutions, are not in the molecular form, but occur chiefly in the form of ions. Thus a hydrochloric-acid solution contains not only hydrochloric-acid molecules, but also hydrogen and chlorine ions.

$$HCL \rightleftharpoons H^+ + CL^-$$

Similarly a caustic-soda solution dissociates into sodium and hydroxyl ions.

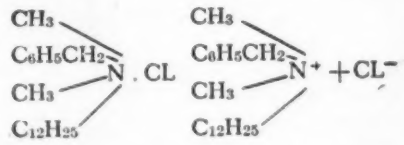
$$NaOH \rightleftharpoons Na^+ + OH^-$$

The hydrophilic moiety of a surface-active compound is frequently an inorganic radical, and, as such, ionizes. Thus fatty alcohol sulfates in aqueous solution produce alcoholic sulphate ions, which are negatively charged, and sodium ions, which are positively charged.

$$C_{16}H_{33}OSO_3Na \rightleftharpoons C_{16}H_{33}OSO_3^- + Na^+$$

As a consequence, the surface activity of the alcohol-sulfate is a phenomenon of the alcoholic ion, rather than of the molecule.

Not all surface-active compounds behave in a manner analogous to the foregoing. One of the most potent of our hydrophiles is the quaternary-nitrogen atom. Products possessing this radical are important factors in the field of surface-activity. Lauryl dimethyl benzyl ammonium chloride is an extremely potent, surface-active auxiliary. In solution, it dissociates into lauryl dimethyl benzyl ammonium ions, which are cationic, or positively charged, and chlorine ions.



It will be observed that the quaternary-ammonium ion is positively charged, in contradistinction to the negatively-charged, alcohol-sulfate ion. This fact is of prime importance in the study of surface activity and constitutes a differentiation of surface-active compounds into classes.

On the basis of their ionization predilections, surface-active compounds may be subdivided into three general classifications:

1. Anionic Auxiliaries
2. Cationic Auxiliaries
3. Non-Ionic Auxiliaries.

ANIONIC AUXILIARIES. Most of the surface compounds used in industry belong to the anionic class. This is due partially to the fact that the members are more easily synthesized and hence are of lower price, but is chiefly due to their greater adaptability to existing processing methods. All yield, in aqueous solutions, negatively charged ions and lower tensions, both surface and interfacial. For most purposes, the maintenance of the surface-active compound as such is a prerequisite for a proper solution.

Most of the common articles of commerce are likewise anionic. These

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include the fibers and fabrics that form the basis of our wearing apparel, the leather used in the preparation of our shoes, and the wool which has miscellaneous uses. Materials employed in converting these articles into the final product (dyestuffs, sizes, etc.) are likewise anionic.

It is a law of science that similarly charged bodies repel, whereas unlike bodies attract, one another. If the auxiliaries used to promote surface-activity were differently charged, they would be removed from solution by the material being processed and the surface-activity of the processing bath would become lessened. Thus, negatively charged sizes, oils, and pigments require anionic auxiliaries to produce emulsions.

However, many of the inherent defects of anionic auxiliaries are due to their type of charge. The lack of solubility of many of the members in the presence of heavy metallic salts and in sea and hard water, as well as the tendency of the auxiliary to salt out in saline solutions, are due to the type of ion present on the compound.

CATIONIC AUXILIARIES. The cationic auxiliaries have been one of the newer developments in the field of surface-activity. Suitable members possess unique properties that make them of particular interest to industry. They permit the production of different types of "sizes" and emulsions, not possible with the older types of surface-active compounds. The salient characteristic of these compounds is their positive electrical charge. This renders them unsuitable as auxiliaries for ordinary textile-processing operations. They tend to insolubilize dyestuffs and to react with textile materials during ordinary wet-processing. These adverse characteristics are of virtue in achieving permanence of finish.

The result has been the production of permanent cationic softening-agents. In such auxiliaries, optional softening effects are emphasized. The agents react with paper and textiles in much the same manner as dyestuffs; and they are not merely surface coatings, as with the older types of softening-agents, but for all practical purposes form permanent chemical compounds with the treated material. Superior softening effects are thus produced.

Many dyestuffs are likewise set by the cationic auxiliaries, particularly direct colors. These dyes, being anionic, react with cationic auxiliaries, even when the color is present on textiles. The product of this union is not particularly stable to soap, and hence does not greatly increase the wash-fastness of color. The auxiliaries do, however, render fabric colors resistant to perspiration and bleeding.

One very interesting use of the cationic surface-active agents has been in the field of textile finishing sizes. Most finishing sizes, like the textiles, are anionic. As a consequence, but little size is absorbed by a fabric during finishing unless a high concentration of finish is present in the processing bath.

It has been found that certain cationic surface-active compounds have the property of reversing the type of charge on the finish. Such a reversal results in a ready absorption of the size by the textiles. Latex and rubber emulsions are not easily picked up by wool and other fibers. The charge on the rubber particles may be reversed by the addition of a cationic surface-active compound to a latex emulsion, with the result that the size is almost quantitatively exhausted onto textiles worked in such emulsions. Similar results have been secured in textile and paper processing with various rubber emulsions.

The cationics are of inestimable value in producing emulsions and dispersions with positively-charged pigments and oils, and they find extended use in the formation of various types of lacquers and paints. They are also valuable auxiliaries for use in strongly acid and alkaline baths. Some, indeed, are stable in concentrated hydrochloric acid and in alkaline solutions of mercerizing strength.

Most cationic surface-active compounds are good germicides and fungicides, thus are being extensively employed as non-toxic industrial bactericides.

NON-IONIC AUXILIARIES. Only a few surface-active agents of the non-ionic type have been used industrially up to this time. Most contain, as a hydrophile, some type of polyglycol complex. Being non-ionic, these auxiliaries are but little affected by heavy metallic salts and the elements of hardness in commercial waters. Even sea-water exerts but little action on their potency.

A few members of the group are receiving employment as marine and salt-water soaps, but the chief use of these compounds has been in the production of emulsions. The wetting and penetrating influence of the non-ionic auxiliaries is somewhat less potent than the better representatives of the anionic and cationic classes. They have, up to this time, not been as extensively studied as the ionic types; but there is reason to expect that in the near future non-ionic types of surface-active materials of much greater potency will make their industrial appearance.

To date most of the developments on surface-active materials have been in the evolution of more potent hydrophiles. The hydrophobes have been little studied.

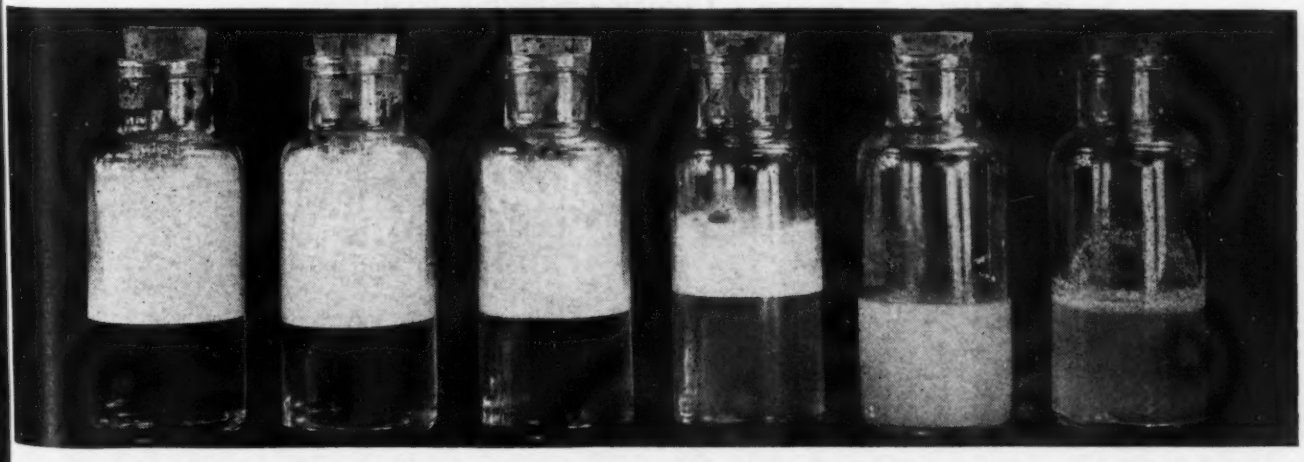
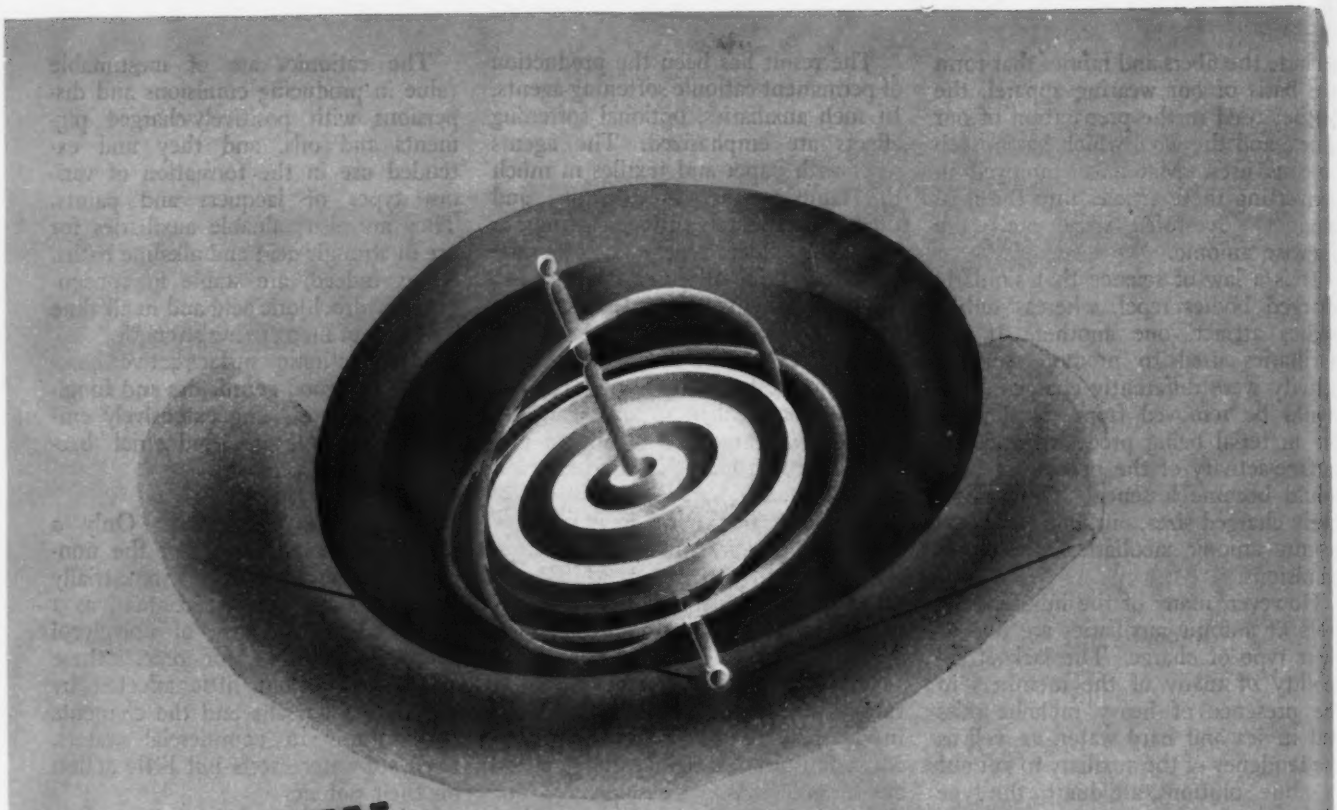


*Fig. 3. **Neither acids nor lime affect foaming properties of certain synthetic detergents. From left to right, first three bottles contain ¼% synthetic detergent in, respectively, distilled water, 1/10% acetic acid, and water of 100% hardness; while the last three bottles contain ¼% of olive-oil soap in the same liquids.***



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The ability of our Laboratories and Technical Staff to assist you in maintaining this balance is the measure of our success. Call on us to work with you. Cooperation now may throw light on *tomorrow's* problems. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Dyestuffs Division, Wilmington 98, Delaware.

Du Pont Dyestuffs

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

DU PONT DYESTUFFS

T. W. Staff Photo

Careful handling of skeins prior to drying reduces breaks in winding rayon yarn.

DRYING Affects WINDING In Rayon-Yarn Throwing

HIGHLIGHTS: Skeins Should Be Dried Right Side Out — Wrong Air-Flow Direction Can Tangle Yarn — Four Winds or Less Per Inch on Bobbins for Best Twisting.

By S. J. MILLER

DRYING RAYON SKEINS varies greatly among throwing plants. Some use the open-air method, which consists of hanging the skeins on poles to air-dry in a large room. Some hang the skeins in a room that is heated and has the air circulated by fans. This is similar to the box-dryer or truck-dryer method in which the skeins are placed on poles and these in turn are placed on trucks and rolled inside a large dryer box.

The most modern type is the automatic skein dryer, which will be considered here. For this type of dryer, the yarn is placed on poles at one end and then is passed through two or more sections on an endless conveyor driven by a variable-speed transmission. These sections are heated by steam coils and the hot air is circulated by fans on each side of the dryer.

The temperature at the in-take end of the dryer should be 160° F. and at the delivery end should be 155° F. Under no conditions should the heat exceed 170°. Many dryers, in addition to heat regulation, also have wet-bulb controls to prevent the yarn from becoming over-dried.

The drying poles as a rule are 6 ft. long and the number of skeins per pole is governed by the size or yardage of the skeins. When hanging the skeins on these poles, they must be thoroughly but gently shaken out. It is important that they be hung straight and dried right side out. If hung in a twisted position, they will be crinkly, causing jumpy and loose winding. Breaks in winding can often be reduced one-half by proper hanging. The latest developments here are lease-band arrangements that show visually the outside of the skeins.

When the dry skeins are taken from the poles after completing their course through the dryer, they are usually packed in cases which should be lined on the inside, so that the yarn is not damaged.

The dry skeins should be allowed to condition as long as possible and certainly never used until they have set for at least two to four hours. Winding hot skeins can cause defective cloth.

It is important to watch the skeins as they travel through the dryer to see that they do not become tangled. On traveling through the dryer, hot air is blown up through the skeins in the first section and down through the skeins in the last section of the dryer. In a three-unit dryer, the air flow is also down for the middle section.

Bright and dull yarn of first and second quality give very little trouble in drying. Extra-dull yarns are more in-

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Even in the steaming jungles of the Pacific, this Army Field Ration Sugar pours freely from a special Sylvania cellophane envelope. Unquestionable proof of Sylvania's moisture-proofness! Here you see just one of the many qualities which make Sylvania cellophane indispensable for vital wartime assignments.

Right now, much of our cellophane is at war—that means a lesser quantity for civilian use. But the developments Sylvania is making today will result in many more uses of this better cellophane in the postwar tomorrow.

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clined to blow up and become tangled. All soft yarns should receive more care in hanging and in taking off the poles.

WINDING. When winding is from prepared cones, the same winding machines are used as for winding from skeins; but no swifts are needed. Instead, angle-iron brackets are fastened to the end stands and middle stands of the winding machine about 15 in. off the floor. A board about 6 to 8 in. wide is fastened to these brackets. It should run the entire length of the machine. This board is used to hold the cones. It is good practice to set the cones in a felt base to prevent any shelling off which might cause underlaps and breaks. Directly above the cones, a rod or board should be placed, running the entire length of the machine. On this rod or board disc tensions can be attached, so that the thread can pass through the tensions and give the spool the proper firmness for twisting. It is important that the disc tensions revolve freely. They should be examined periodically in order to replace those that become cut or nicked and to clean those that become dirty.

The thread speeds in winding are often about 250 yd. per min. on prepared cones and 150 yd. per min. on soaked skeins. Some mills use higher speeds and others somewhat lower.

PRECAUTIONS. The following points should be observed to achieve satisfactory results when winding from prepared cones and from skeins.

1. Never wind rayon yarns that are damp.
2. When winding skein yarn, use the proper weight on swift hub to give a relatively firm bobbin, but not a hard one.
3. When winding from prepared cones, have disc tensions weighted to give same effect as above.
4. Never change thread speeds without adjusting disc tensions or swift-hub weights.
5. When winding from skeins, the swift hubs and gudgeons should be free from waste which might change the tension on the yarn.
6. The wire hook which holds the weight on the swift hub should not allow the weight to run against the inside of the skein, or broken yarn will result.
7. Use a flat build so as to make the best bobbin for twisting.
8. Have the proper number of winds on the spool—not over four per inch. A faster traverse on inferior yarns might give better results.
9. Only weaver's knots are to be tied.
10. Use mechanical knotters when possible. These tie and cut the knot in one operation. When scissors are used, be sure the tails are clipped $\frac{1}{8}$ in. from the knot.
11. The bobbins should be removed by holding the head of the bobbin in one hand and removing the spindle with the other.
12. At no time should the yarn be touched with the hands or fingers, in order to avoid soiling.
13. When starting a new bobbin (empty) the end should be tied at the head of the spool. This will prevent loose tails or ends from flying out during twisting.
14. Winding frames should, at all times, be kept free from loose waste and tailings. If they are drawn into a bobbin, breaks or defects in the yarn may result.

OPERATOR ASSIGNMENTS. The winding operator assignments given in the table are based on actual mill practices for first- and second-quality viscose-process yarn. For inferior yarn, it is usually impossible to determine in advance what assignment should be made.

Often, it is necessary for a winding operator to run more than one yarn. For this reason, the percentage figures are given. An operator can be assumed to have a full load if the sum of the percentages of the sides assigned her approximates 100. It is rarely satisfactory to give an operator a fractional side.

The production table assumes a machine efficiency of 80%; however, if there is a surplus of winding machines, additional spindles can be assigned and a lower machine efficiency can be figured. Some plants have found this advantageous since it resulted in higher operator production than is shown here. The assignment and production tables are given for a plant balanced in such a manner that 80% winding-machine efficiency is needed, based on two-shift operation. It is rarely advisable to operate skein winding on the third shift.

Winding cake yarn is similar to winding from cones. For cake winding see TEXTILE WORLD for January 1943.

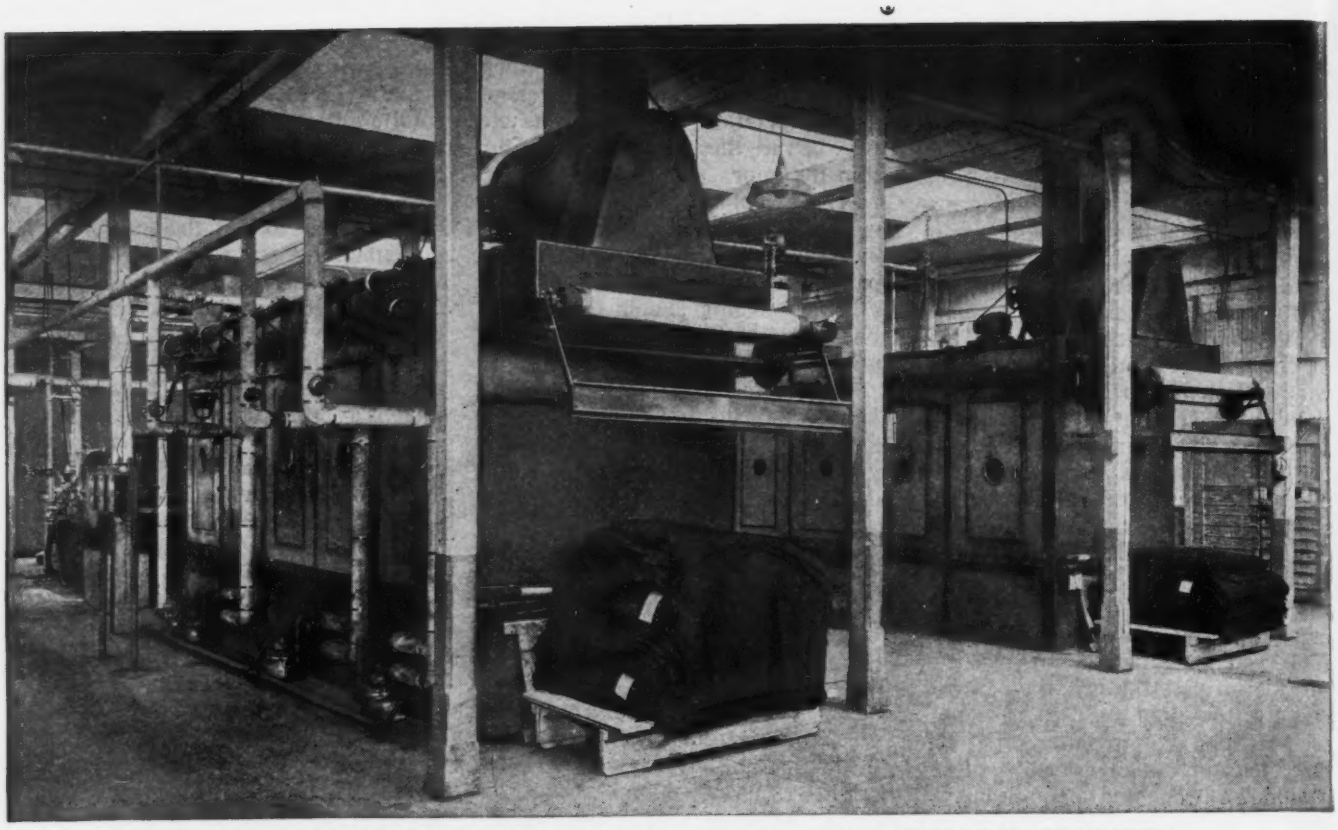
WINDING PRODUCTION TABLE

Denier	Yards per Pound	Thread Speed Y.P.M.	Lb. 80 Hr. 100% 1 Spindle	Lb. 80 Hr. 80% 1 Spindle	Ends per Operator	Daily Task Operator
Winding from Skeins						
75	59,527	150	12.096	9.677	155	150
100	44,645	150	16.128	12.902	155	200
150	29,764	150	24.192	19.354	124	240
200	22,322	150	32.256	25.805	93	240
Winding from Prepared Cones						
75	59,527	250	20.16	16.128	217	350
100	44,645	250	26.88	21.504	186	400
150	29,764	250	40.32	32.256	155	500
200	22,322	250	53.76	43.008	124	533

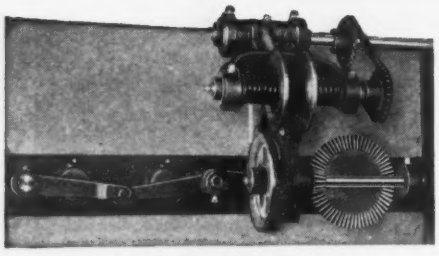
WINDING OPERATOR ASSIGNMENTS

Denier	Supply	Delivery	Speed Y.P.M.	Operator Layout*	% Per 1 Side
75	Skein	8 oz. Spool	150	5 Sides	20.0%
100	"	" " "	150	5 "	20.0%
150	"	" " "	150	4 "	25.0%
200	"	" " "	150	3 "	33.3%
75	3 lb. Cone	8 oz. Spool	250	7 Sides	14.3%
100	" " "	" " "	250	6 "	16.7%
150	" " "	" " "	250	5 "	20.0%
200	" " "	" " "	250	4 "	25.0%

*Spindles per side—31.



BOTANY MODERNIZES ITS PIECE CARBONIZING WITH THREE NEW HUNTER CONTINUOUS RANGE UNITS



HUNTER PATENTED RANGE DRIVE

The illustration above shows a new development which holds predetermined tension on cloth from the time it enters until it leaves the unit, and here are the important aids it gives to the acceptability and salability of your fabrics:—

(a) Uniform tension on goods throughout the unit.

(b) Complete elimination of impaired tensile strength.

(c) Complete protection against streakiness and marked surfaces on face of finished goods.

(d) No tendering of cloth on seams or anywhere in the piece.

(e) Absolute guarantee against building up of slackness and further risk of damage.

When the Botany Worsted Mills decided to modernize their piece carbonizing, they chose three Hunter units as shown in the illustration above.

These three modern carbonizing ranges have reduced costs substantially. These units guarantee the latest advance in carbonizing equipment, with performance *pretested* and production *guaranteed* and cost *determined* before you install the equipment.

These up-to-date units consist of an Acid Soaking Tank with Pneumatic Squeeze Rolls, Dryer and Carbonizer.

All Hunter Drying Equipment is sold under a production guarantee based on laboratory or field tests and backed by wide experience in practical drying. Not only do you take no risk, but every Hunter unit is designed to meet the individual conditions in the customer's own plant, including the character of the cloth and all other essential details.

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MECHANICAL HANDLING Eliminates Labor

Fig. 1. Handling equipment at Union consists of an overhead track connecting the knitting room with the gray room located in another building, as shown on the right. The system at the left shows the structural work supporting the track running from the gray room to the dyehouse.

All photos courtesy American Monorail Co.

HIGHLIGHTS: Entire Output of Mill Handled Overhead — Automatic and Semi-Automatic Operation Obtained.

MANPOWER SHORTAGE and difficult hand-trucking operations across the yard at Union Mfg. Co., Union Point, Ga., induced the management to investigate and install a materials-handling system designed to deliver knit goods from the knitting room to the gray-storage room, and from the gray storage to the dyehouse. Two separate systems, each possessing many common features, were worked out; and now, after several years of successful operation, and a few minor changes, O. O. Scott, vice president and superintendent, expresses complete satisfaction with the system. Additional experiments along this line are contemplated.

Two systems are shown in Fig. 1. That on the right travels from the knitting room to the gray-storage room and employs an overhead track designed to eliminate all interference with movement of trucks in the mill yard. The track is composed of two angle irons, back to back, giving a broad, flat surface underneath, against which the pneumatic traction wheel of the carrier operates to obtain traction for pulling the load. The track also serves as a conductor for the electric current which operates the motor. It is protected from the weather by a galvanized-iron shield and is rigidly supported on the structural-steel columns and beams visible in Fig. 1. The carrier car is also of steel. Inside dimensions are 30x60x24 in. The carrier handles an average load of 12 bags of socks, each bag containing 20 doz. The carrier travels at the rate of 150 ft. per min. It is started by hand from the knitting room, stops automatically at the gray storage terminal, dumps its load, and at the end of a 30-sec. interval returns automatically for another load. On the return trip, the carrier trips a switch at the knitting-room terminal which applies the brakes at the same time the current is interrupted. The carrier then stands until started by hand.

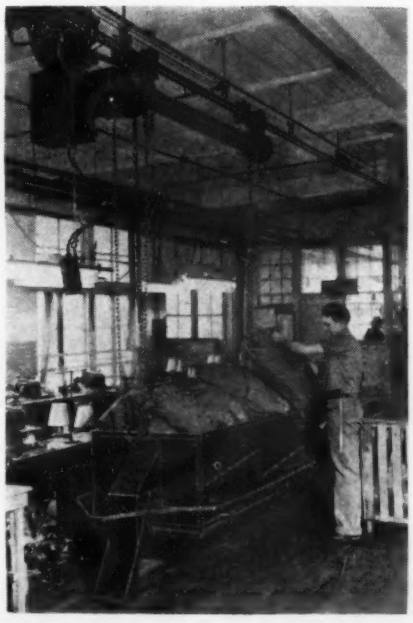
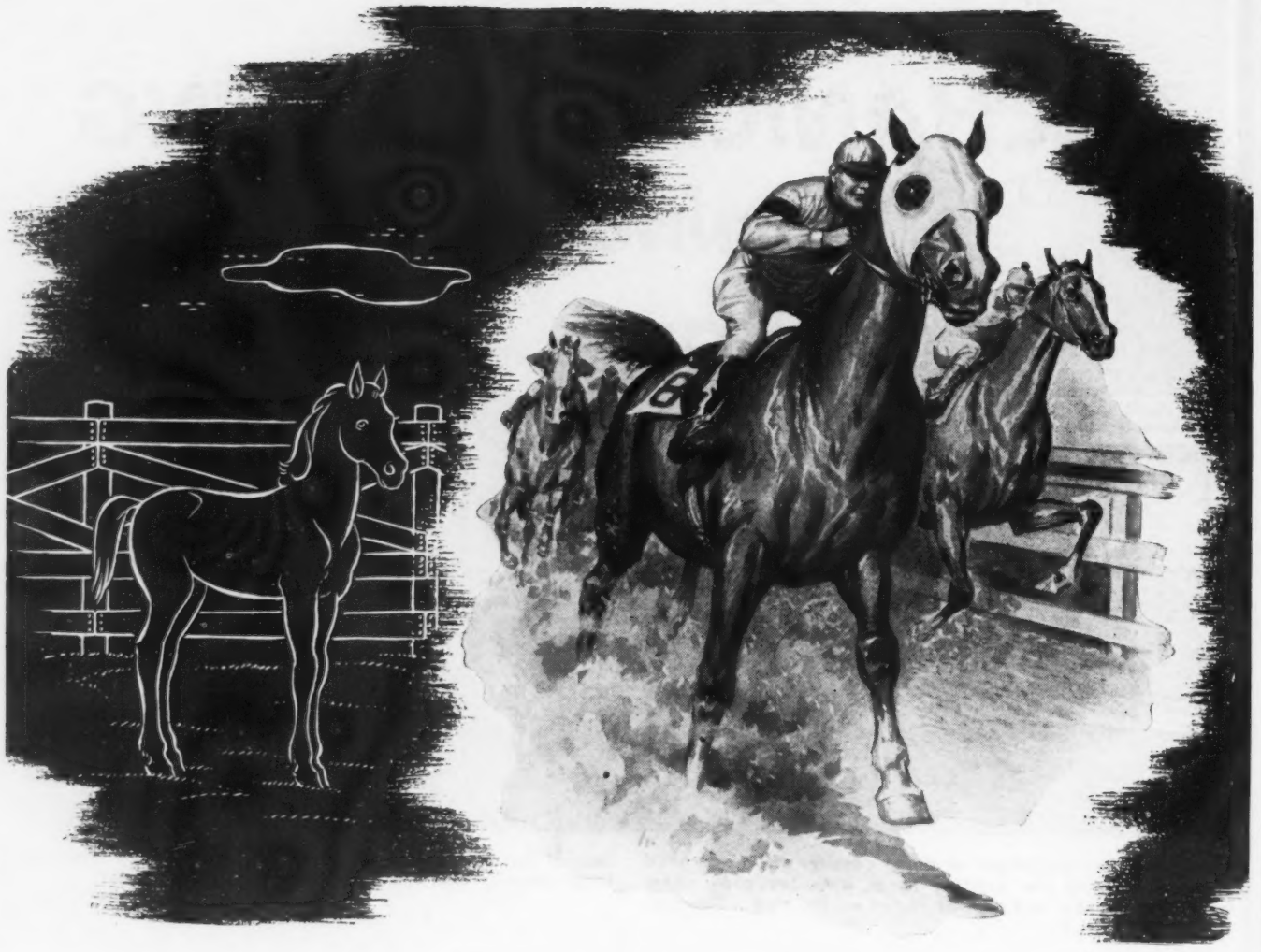


Fig. 2. The carrier is loaded in the knitting mill with bags each holding 20 doz. pairs of socks, to be carried to the gray room for processing prior to being sent to the dyehouse.

The time relay switch in the gray room can be adjusted for any reasonable interval, and if desired the current can be interrupted and the carrier held

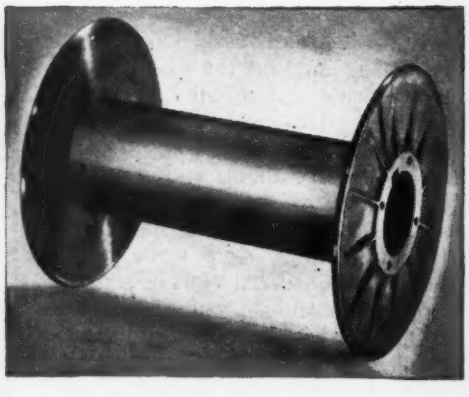


Champions are Born . . . And Made

The Kentucky Derby winner that sweeps on to added laurels at Belmont, Aqueduct and Arlington comes from a long line of carefully bred winners. In addition, such champions are expertly trained and carefully handled to enable them to live up to the promise of their pedigrees.

Champions in their own field, Hubbard spools and reels are products of a similar combination. For example, the Dowmetal Magnesium Alloy used in Hubbard Warp Beams is pedigreed material developed by careful selection for necessary metallurgical qualities and light weight. Hubbard's more than 30 years' experience provides the skill of design and manufacture that results in a perfectly balanced, smooth running beam.

Get complete details about Hubbard magnesium alloy warp beams as well as stainless steel spools and bobbins now. Learn how you can effect important savings in operating costs with this longer-lasting, stronger equipment. Write today so you will have this information when you need it.



Designed for every type and denier of yarn, Hubbard Magnesium Alloy Warp Beams have removable, interchangeable heads.

ARMY E NAVY

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at that point until re-started by hand. The push-button control is part of the carrier equipment.

The other system, operating between the gray room and the dyehouse, is similar in most respects. There are, however, a few differences that might be noted. Instead of a steel car, the carrier transfers a wooden, two-wheel truck 25x30x30 in. The load varies from 100 to 150 lb., net. It is started from either end by hand, but stops automatically. The truck is disengaged from the two hooks of the hand-hoist on reaching its destination and another empty or loaded truck substituted. Loads are carried in both directions, although the principal duty is to carry goods from the gray room to the dyehouse.

Yale & Towne double-hook chain hoists are used and ½-h.p. Howell Red Band electric, elevator-type motors employed. The system operates on 110-volt, 60-cycle current and handles the entire output of the mill, which is about 5,000 doz. per 16-hr. day.

These handling systems were installed by American Monorail Co. and, according to Mr. Scott, will pay for themselves through labor savings alone in four years, in spite of the expensive yard-work installation involved.

The handling systems were so designed as not to interfere with normal yard traffic.

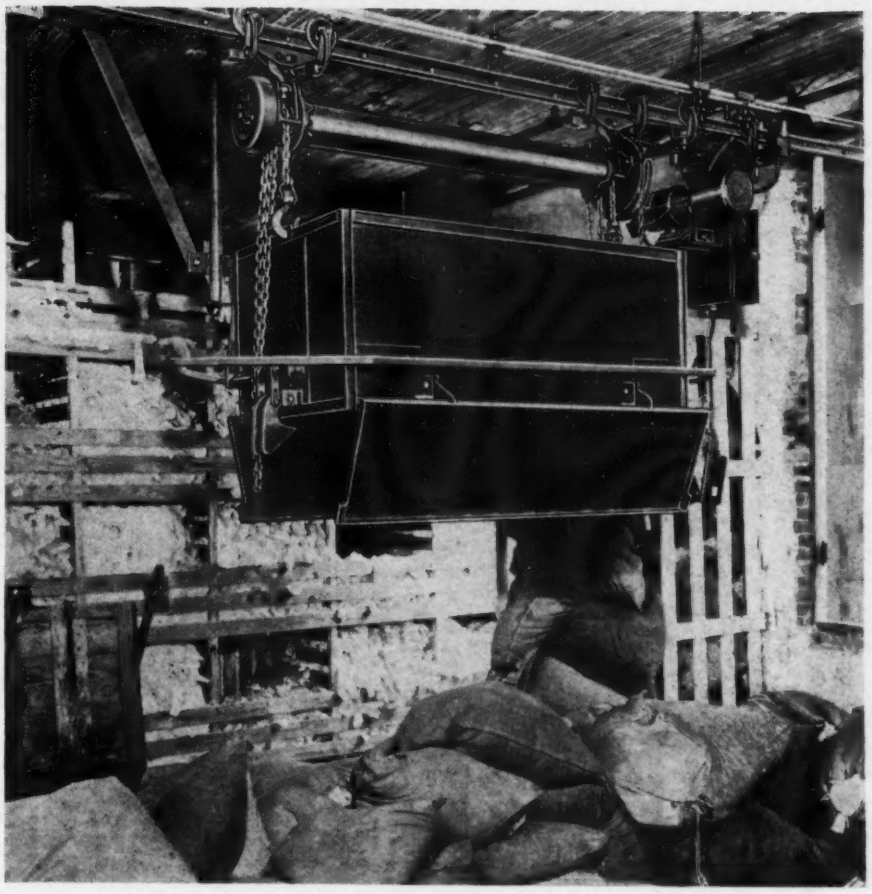

Fig. 4. Bags of hose are automatically dumped on the floor of the gray room as the carrier is brought to a stop. The bumper encircling the car opens the spring-hinge to the gray room.

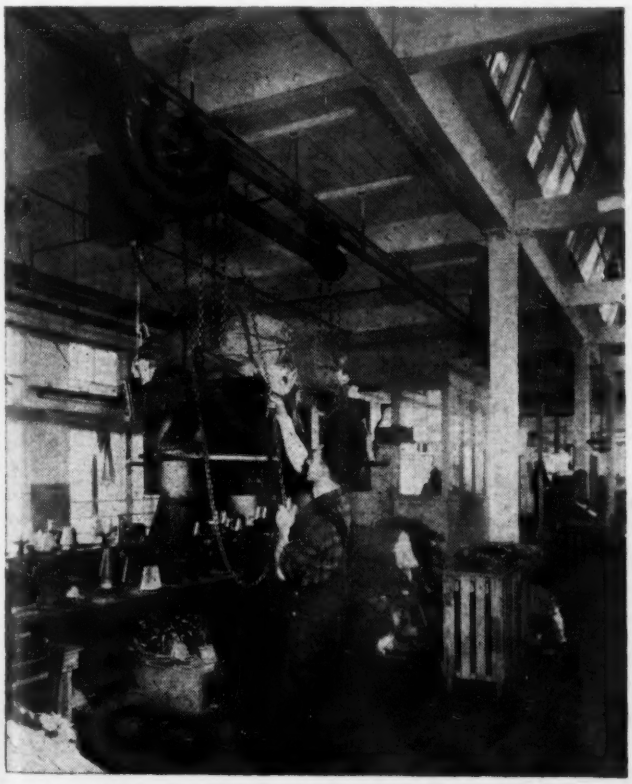

Fig. 3. Raising of the car is accomplished normally by means of a hand-hoist. When the car is snug against the carrier, it is started on its run to the gray room by hand.

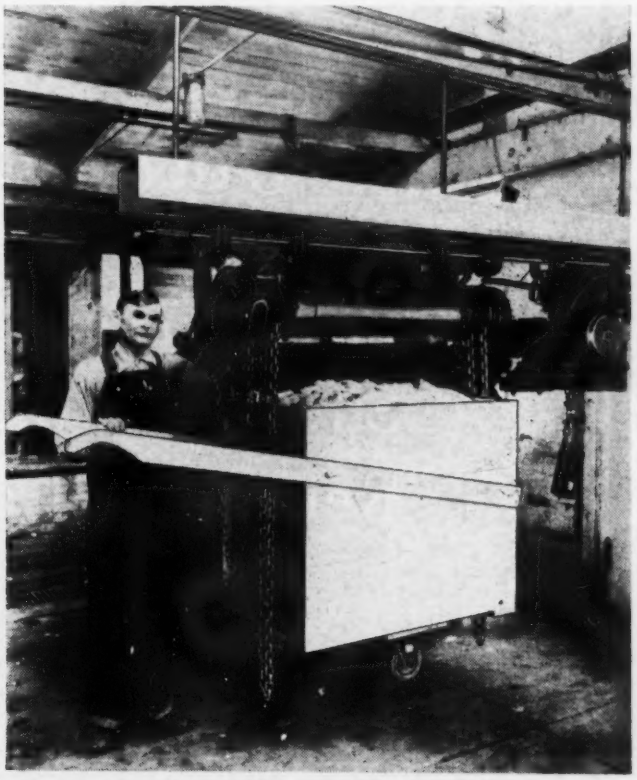

Fig. 5. Wooden trucks are used in place of a steel car for carrying the hose between the dyehouse and gray room. The truck is raised beneath carrier by hand-hoist.

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Fastening BELTS and TAPES

HIGHLIGHTS: Use Fastener Size Recommended by Manufacturer—Cotton Spinning Tapes Held by Fasteners Reduce Vibration—Condenser Tapes Also Laced.

JUDICIOUS SELECTION of belt fasteners will enable an operating engineer in a textile mill to keep his plant operating over a maximum period of time without belt breaks. Such breaks are responsible for numerous stops in production. Also, some types of fasteners will reduce vibration of the pulley, driving shaft and connecting units, not to mention a reduction in bearing wear.

HINTS ON FASTENERS. In the case of fabric belts, the pull or strain of a belt is borne by the long, strong warp cords of the fabric. Hence a good fastener should grip these cords without cutting or injuring any of them.

In textile mills the average belt used would ordinarily be classified as small; the so called hinge-and-pin type fasteners are quite practical for such belts. These consist of a series of wire or metal hooks gripping the belt from both sides, and when properly applied each individual pin or hook develops a loop at the end of the belt. These loops, which are on each end of the belt to be spliced, are dovetailed together and a pin inserted. The pin, more frequently than otherwise, is made from specially processed rawhide.

Manufacturers of fasteners have worked out charts indicating the size of fastener to be used on each standard width and ply of belting. These schedules should be carefully observed.

Belt fasteners can be applied by hand, using a hammer to set the hooks into the structure of the belt. This can be done successfully, but in a vast majority of cases the hooks are irregularly adjusted and will be a source of trouble. Manufacturers of fasteners furnish small machines, some hand powered and others motor operated, which apply the fasteners properly and much more quickly than is possible by hand.

Another important factor is to see to it that belts are squarely cut before any attempt is made to lace them. A belt cut on an angle and joined in that condition will throw more strain on one side of the belt than on the other.

FASTENERS FOR SPINNING TAPES. Recent developments have been made which permit the fastening of thin

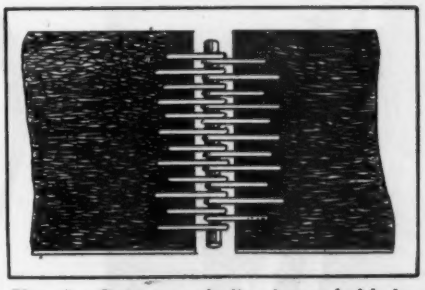

Fig. 1. Cotton spindle tape held together by meshed hooks and a pin is subject to minimum vibration.

tapes and belts with metal hooks, as shown in Fig. 1. A pin holds the hooks together. Experiments indicate that it is now possible to fasten thick tapes, as used on some spinning frames and twisters, with metal hooks when these tapes are $\frac{1}{16}$ in. thick. Thinner tapes cannot be fastened in this manner as the hooks will pull out and the fastener itself may be of greater thickness than the tape, permitting the fastener to score the drum. Fasteners that are of greater thickness than a belt continually strike the drum.

Most spinning tapes are lap-stitched. Every time the lap runs over a tension pulley, a slight vibration is set up because of the unevenness in tape thickness caused by the lap. Vibration tests have indicated that a $\frac{1}{16}$ in. spindle tape hooked together with metal fasteners will operate with less vibration than a thinner tape with a stitched lap. Also, the hooked tape will operate for a longer period of time.

Frequently spindle tapes will run off the tension pulley and become caught. It is a simple matter to pull the pin holding the two ends of tape together and remove the tape in one piece. After removal, the tape may be threaded about the cylinder, spindles and tension pulley and relaced.

Spindle tapes that are to be fastened together must have the tape ends cut absolutely square with the edge. A liquid tape-binder is applied to both ends and when the binder hardens it seals the fabric and prevents the ends from fraying. Hooks are available in sizes ranging from $\frac{3}{8}$ in. to 2-in. widths and are applied to the tape ends either by hand or by machine in the same manner as lacing ordinary belts with this type of fastener.

LACING CONDENSER TAPES. Condenser tapes for woolen cards equipped with condensers are frequently purchased as endless tapes. Use of metal hooks permit tape to be purchased in long rolls. Whenever a tape requires replacing, it is a simple matter to cut a piece of tape to the required length, apply fasteners, and thread about the rolls. A rawhide pin fastens the hooks together.

The actual process of cutting tape and applying hooks is exactly the same as with spindle tape, except that it is not necessary to seal the tape ends. Condenser tapes are usually of leather and sealing is not necessary, as with a woven tape.

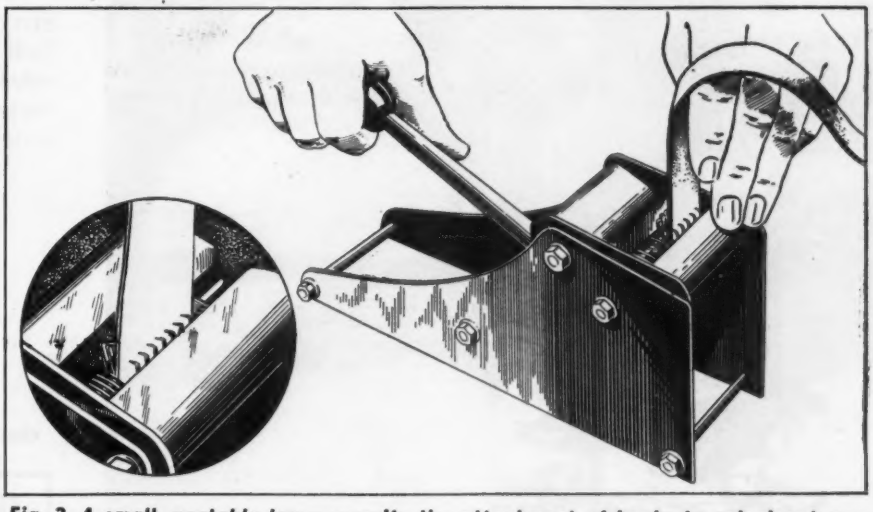

Fig. 2. A small, portable lacer permits the attachment of hooks to spinning tapes in a matter of minutes.

Courtesy of Clipper Belt Lacer Co.

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DON'T WASTE SOAP . . . vital materials needed to win the war are used in making soaps.

Full-Fashioned DEFECTS

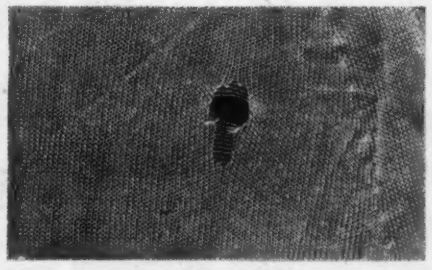
FOUR PREVALENT full-fashioned hosiery defects are shown in the accompanying notebook page reproductions. This system of mounting (or otherwise illustrating) defects, their causes and corrections, soon leads to a complete notebook that can be of great help to knitters, to fixers, and particularly to learners.

Illustrations such as that showing a rough selvage are of particular value in training new employees.

Another important feature of compiling such a notebook is that the description of defects assists in the standardization of terms used. For example, the holes cut in welt and leg have different causes and remedies and therefore require different descriptive designations.

ROUGH SELVAGE

Appearance: Selvage uneven and rough. Cause: Improper tension alignment or carrier setting. Remedy: Apply the proper tension and the correct alignment and setting of carrier. Note: Photo is slightly enlarged.

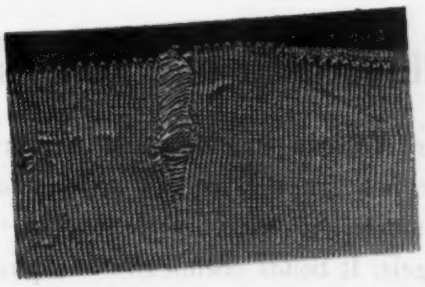


HOLE CUT IN LEG

Appearance: Wide hole cut in leg of stocking. Cause: Usually caused by rough surface on needle, sinker, divider, or work-over bit. Remedy: Can be remedied by eliminating all rough surfaces on fabric-forming mechanism.

NARROWING HOLE

Appearance: Hole in sock where toe begins to narrow down. Cause: Improper alignment of either needles or narrowing points. Remedy: Alignment of needles and narrowing points so that they will make the proper union when in narrowing operation.



HOLE CUT IN WELT

Appearance: Wide hole in stocking near top of welt. Cause: Knitter leaves welt wire too high while removing it from fabric, causing end of welt wire to bruise fabric on take-up roller. Remedy: Have knitter pull welt wire exactly parallel with take-up roller until it is clear of the fabric.

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TO COVER COTTON PARITY Goods Prices Undergo Study

HIGHLIGHTS: OPA and Industry Faced with Many Difficulties — Third of Cotton Production Affected — Formula for Adjustments Adopted—Cost Survey Planned.

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

THE OUTLOOK for a satisfactory price structure for the cotton-textile industry is far from sanguine at the present writing. Notwithstanding the provision in the Bankhead Amendment to the Price Extension Act that OPA calculate ceilings on each major cotton textile item so that they reflect parity prices for growers of raw cotton, it now appears that the industry is faced with a period of pulling and hauling before any dependable pattern of price ceilings emerges. Except for a few major items, no quick action can be expected.

Announcements can be looked for soon on at least the two main categories of sheetings, class "A" print cloths and perhaps some other classes, carded yarns, and flannels. These are in addition to the adjustments already made in denims and chambrays.

Spokesmen for the industry in Washington admit that the Bankhead Amendment continues to place the final say-so on price ceilings with OPA, but they point out that it represents progress of a kind. In the past, OPA had insisted that so long as textile ceilings as a whole reflected parity for cotton, it was not obliged to adjust individual items. Now a list of major items* representing about one-third of the total cotton production of textile mills must be re-examined to comply with provisions of the 1944 Price Extension Act. This allows a fighting ground for the industry to present cost data and argue its side of the question with OPA, item by item. In view of the necessities of the industry and Congressional pressure, it is expected that OPA's attitude will be more lenient than in the past. However, it is admitted that so far price-ceiling adjustments have been granted grudgingly and far short of what industry hoped to get.

*Most combed and carded cotton yarns, major types of sheets and pillowcases, denims, 3.60-yd. sanforized chambrays, most combed yarn fabrics, knit heavy-weight underwear.

UNCERTAINTIES. Uncertainties besetting the industry are in the main due to the following reasons:

1. OPA has not modified its general attitude, which is to the effect that the industry as a whole is making large profits (using the base period 1936-1939.) Therefore, the revisions being made are barely enough to take care of actual advances of cotton, with little leeway for any further advances in raw cotton, except through the long process of another examination of cost data. It is pointed out, furthermore, that the great majority of the industry which does not fall in the "major item" group will have to pay more for raw cotton and will get no price-ceiling considerations—at least at present. Even on major items, adjustments are not regarded by many mill men as satisfactory. Officials of OPA, however, emphasize that not only are they responsible for revisions in price ceilings but that they must also guard against serious inflation, which they claim would result if industry requests were granted.

2. Delays in announcing new ceiling adjustments have made it impossible to keep an uninterrupted flow of cotton textiles going to industry. While open pricing of certain cotton textiles has been allowed by OPA until prices have been revised, it is not allowed on some of the most critical fabrics needed for industrial supplies, agricultural bags, etc. Open pricing at best is considered a makeshift until new prices are set, which industry was told would be announced for many items weeks ago. The blame for delay is thrown back on industry itself by government officials, who contend that some mill owners have asked for more time to submit cost data and put forth their arguments. Also it is stated that some branches of the industry have been slow to realize the need for cost figures as a basis for action. OPA points to the magnitude of the task, citing as an example one category of print cloths with a list of over 400 items.

3. The government agency has too few textile experts on its staff. Most of the top and subordinate men in OPA are completely without textile experience. At present OPA is in search of several competent, experienced men who can work more closely with the industry. This is regarded as a salutory move and a definite offset to those OPA pricemakers who have heretofore assumed that adjustments in textile ceilings are a matter of simple arithmetic.

FORMULA. The cotton-textile industry naturally is interested in the method which OPA has adopted to determine the relationship of price ceilings for major items to cotton parity under the new law. A definite formula for computing adjustments has been adopted. It involves three distinct steps, as follows:

Step 1. Determine the parity-equivalent at the mills for the goods and staple of cotton used in construction. The method used by OPA for determining the parity-equivalent for cotton is explained in this way.

The allowance to translate the legal parity price for cotton from an average location in the cotton belt (Memphis, Tenn., and nearby points) to Carolina mill doors (landed Group B mill points) may be illustrated as follows:

	Cents per lb.
Parity, as of June 15, 1944 (equivalent by law to $\frac{7}{8}$-in. middling in warehouse Memphis)	21.08
CCC loan differential between $\frac{7}{8}$- and $\frac{13}{16}$-in. middling ..	1.05
	22.13
Discount for strict low middling (CCC loan differential	1.35
	20.78

(Continued on page 129)

Where the Past is Part of the Future

FOR MORE THAN A CENTURY, Cheney Brothers have been famous for fabrics of unusual beauty and distinction—fabrics that have graced the nation's finest homes and wardrobes.

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Mills at Manchester, Conn.

ALSO AT MANCHESTER, CONNECTICUT, A SUBSIDIARY...PIONEER PARACHUTE COMPANY

Average spread for 1⅛ to 1 ⅛-in. strict low middling between Memphis spot price and Group B mill prompt delivery price, Aug. 1, 1943, to Feb. 15, 1944	1.38
Mill equivalent to parity for 1⅛-in. strict low middling, landed Group B destination points	22.16

CCC's 1944 loan premiums and discounts are used for quality differentials.

Congressman Paul Brown of Georgia recently gave a specific instance to illustrate, roughly, the need for this part of the formula. For example, he stated, parity on 1⅛-in. cotton landed at southeastern mills was 23.38c. a pound as of March, 1944. But their ceiling on the textiles made from the cotton reflected only 21.67c. a pound, or $8.55 a bale less than parity. As a result of this and similar instances, he pointed out, the price of cotton has been below parity, resulting in the production of much-needed low-cost goods being drastically curtailed. This situation must be changed by the Bankhead Amendment and the working of the formula which is in use.

Step 2. Determine the weighted average of current costs of conversion of cotton into the particular fabric. That is, if it costs the industry 9c. to convert cotton into a yard of gray goods, this represents the second brick in the structure to be added to the parity price of cotton. To both these items is added

Step 3. The average profit per unit in the base period 1936-1939, to make a price. Depending upon the product, other items of cost may be added. In some instances it is the practice of the industry to allow a discount; again it is not unusual to pay a commission.

The price sheet is then subject to a re-examination and revision upward or downward, as indicated by a final analysis of cost data. At such time, there is room for honest differences of opinion between industry representatives and agency officials. Inflation tendencies must be constantly checked; yet prices on textile products should be sufficient to pay cotton farmers parity price and allow industry to make a "fair" margin of profit.

COST SURVEY. OPA has already formulated plans for an overall survey of the cotton-textile industry to get more complete data on costs and profits. This will consist of a questionnaire mailed out in a form-sheet with which the industry is already familiar.

The anticipated result of the increase in prices on major items at the gray-goods level has been estimated by OPA spokesmen as perhaps 40 million dollars. It is not possible to say how much of this may be passed on to the consumer. At most, 50% of the amount has been estimated. But it is hoped that a substantial part of this may be absorbed at the converter level by cutting out treatments that increase costs, as well as by better controls at the garment level.

Scheduled for early conferences and consideration are yarns—both carded and combed. At the time of writing, industry representatives have voiced protests against the small increases under consideration by OPA. It has been reported that contemplated increases on coarse carded counts, largely used in manufacturing of military duck, have ranged as low as ½c. a pound. Unofficial opinions are that such a small increase would mean a precipitous drop in production of all duck yarns as far as the sales-yarn market is concerned. Because of rising labor costs and increase in other manufacturing expenses, many spinners of coarse yarn have been operating on an extremely narrow margin of profit, it is claimed. If yarn increases should not meet the actual advance in cost of cotton, it is said that military requirements for duck yarns and other important yarn uses would be in a serious position.

MOSQUITO BARS Released as Surplus

HIGHLIGHTS: Treasury's Surplus Property Division Sets Pattern for Disposal of Unusual Goods.

Treasury is using application photographs to promote sales of surplus property.

IN RELEASING a large quantity of mosquito bars to the trade recently, the Treasury Procurement Surplus Property Division suggested and pictured various civilian uses for them in a promotional letter mailed to prospective buyers. When surplus items are of such an unusual nature as to warrant it, the Treasury plans to use this method of disposal.

These mosquito bars are now being sold through regular trade channels at a flat price of $1.50.

A number of practical uses for the bars are described, such as converting a cot or glider on the back porch into a sleeping room, providing out-of-door playhouses for youngsters, meeting the needs of hunters and campers, etc.

The mosquito net is rectangular in shape, 30 in. wide, 74 in. long and 39 in. high, with a 16-in. sheeting trim around the bottom, which can serve as a floor or give additional height, as desired. The outfit is khaki in color equipped with two "T" metal supporting frames. It has three strong fastening tapes at each upper end which can be used to set it up without the use of the "T" bars. Each corner has a tape for staking to the ground. It can be rolled up into 6x30-in. rolls.

These mosquito bars were made for use in the South Pacific and are now declared surplus because of changes in model.

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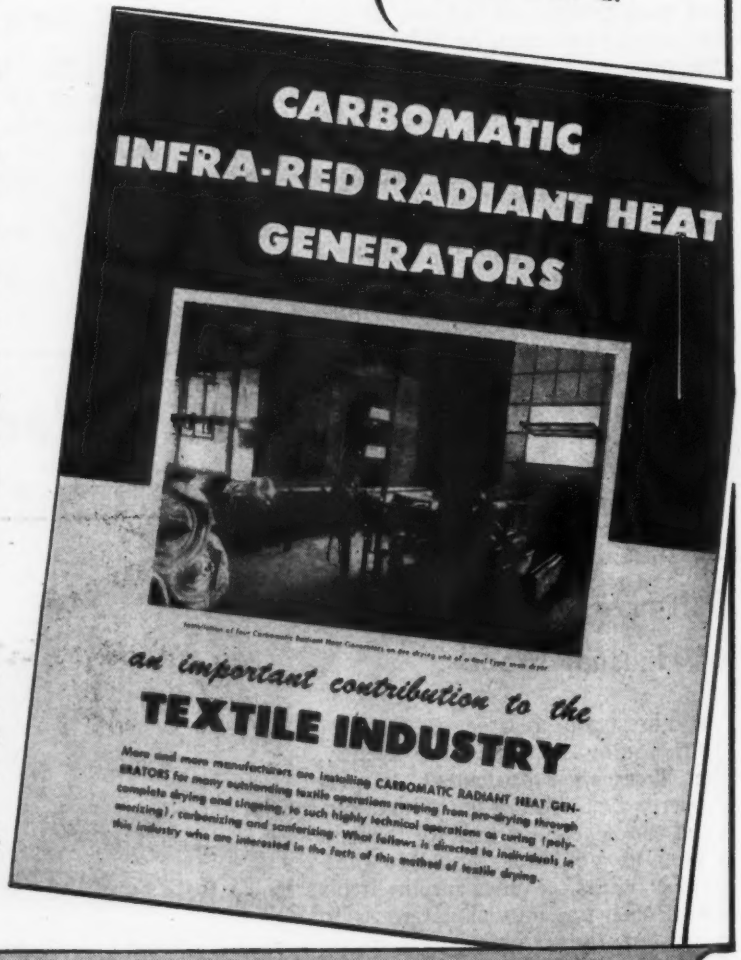
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PIONEERS IN RADIANT HEAT BURNER EQUIPMENT

TEXTILE Equipment NEWS

MACHINERY AND SUPPLIES

Extinguisher for Industrial Fires

Designed especially to extinguish both flammable liquids and fires of electrical origin, is the new "All-Out" fire extinguisher, manufactured by National Powder Extinguisher Corp., 50 Rockefeller Plaza, New York.

The extinguisher ejects a stream of

A dry chemical extinguisher for industrial fires (National Powder Extinguisher)

"All-Out" dry chemical which, when activated by heat, forms a dense, fire-smothering cloud over a flaming area up to 18 ft. The insulating qualities of the cloud help guard against reflash, and create a heat deflecting screen between the operator and flame, permitting close-range attack with greater safety and no heat discomfort. The chemical, a non-conductor of electricity, is harmless to humans and delicate, mechanized parts of motors or machinery.

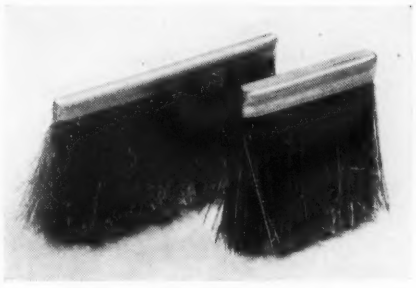
Weighing only 37 lb. fully charged, the extinguisher is easily handled by men or women workers. It is fast in action and can be easily and quickly recharged at the scene of a fire without special recharging equipment. It is stated that both the extinguisher and its extinguishing agent have been tested and approved by the Associated Factory Mutual Laboratories on burning oils, alcohol and gasoline fires.

Brushes for Eliminating Static

Several types of brushes have been developed by The Fuller Brush Co., Hartford, Conn., for removing static from nylon, rayon, and other fabrics subject to excessive static charges during processing.

One type of Fullergript brush employed consists of black hair and copper wire gripped firmly in a metal brush backing or casing. The copper wire is grounded by contacting the steel brush casing and a steel core which runs the length of the strip.

The brush is mounted on inspection machines, coating machines, or on equipment with which trouble is encountered with static charges. The brush casing is grounded to the machine; hence, the copper draws the static from the cloth as it contacts the brush in passing through the machine. Use of a combination hair and copper brush accomplishes two purposes. First, it subjects the cloth to a gentle brushing and removes loose threads and lint on the cloth. Second, it will conduct most mild static charges from the fabric.



Two types of brushes, one consisting of all-copper wire and the other of copper wire and hair, may be used for withdrawing static charges (Fuller Brush)

Another Fullergript brush consisting entirely of fine copper wire is available for withdrawing heavy charges of static.

STAINLESS STEEL DRAW REEL FOR BLEACHERIES

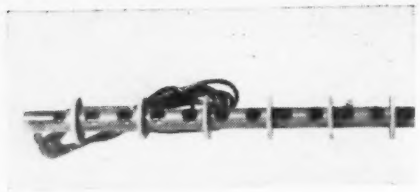
Announcement has been made by Rodney Hunt Machine Co., Orange, Mass., of a draw-reel made of stainless steel which incorporates simplicity with greater strength. Pot eyes can be furnished in either stainless steel or of other materials.

Fiber-Covered Midget Static Bars

Metal-encased static bars with an outer casing of fiber have been developed by Simco Co., 4929 York Rd., Philadelphia.

The bar consists of a charged inner bar with points spaced throughout its length and a brass casing surrounding the inner bar with holes spaced equally so that each point of the inner bar comes in the center of the hole of the brass casing. The inner bar is held in position in the brass casing by insulated bearings. Over the brass casing is a close fitting fiber covering. The brass casing of the bar is insulated from the ground by the fiber casing and is charged by induction from the inner bar and ground. The potential of the brass casing is adjustable and it is possible to fix the casing voltage at the most efficient point for eliminating a particular kind of charge.

These new bars are very well suited to applications where highly inflammable vapors are present as the charged parts of the bar are protected by the outer casing of fiber against



Fiber covered midget static bars for controlling static (Simco)

accidental contact with anything which might produce a spark. Then, because the brass casing is ungrounded, the tendency for a corona discharge or actual spark discharge to take place between the points of the bar and the brass casing is reduced to a minimum. As a further protection against the possibility of a wet web of material coming in contact with a live point, fiber protecting rings are sometimes provided every few inches along the bar.

Fibrograph Determines Cotton Fiber Lengths

Complete length analysis of random samples of cotton may be accomplished in 6 to 7 min., according to Fulton Sylphon Co., Knoxville 4, Tenn., when using the Fibrograph which they have developed.

A staple of cotton fiber is drawn, combed, and inserted in the instrument. Photovoltaic cells are an essential part of the Fibrograph which operates basically, by measuring the reistance of a combed sample to the passage of a slit of light passed over the sample. A curve is traced by a pen on a moving card, and represents the relative number of fibers at each position along the sample. From the information given on the card by the instrument the staple length, distribution of fibers of various length (except ¼ in. and less), and absolute fiber length can be computed.

Useful Accessories for Textile Mills

Chemical stoneware to withstand thermal shocks has been announced by U. S. Stoneware Co., Akron, Ohio. The new stoneware is known as "Ceratherm 500" and can be heated directly by steam or hot gases and can be cooled quickly. It is inert to all acids, alkalies and solvents and may be fabricated in equipment of large size and unusual shape.

A new heater for heavy-duty applications in industrial heating, air conditioning, vapor absorption, drying and other processing work is announced by B. F. Sturtevant Co., Hyde Park, Boston, Mass. These heaters combined the advantages of the old coil-type and the newer types. The heater contains an inner core and an outer core with spiral fins around the outer core.

Buffer tablets for obtaining exact pH value have been announced by Burrell Technical Supply Co., Pittsburgh 19, Pa. These tablets are offered as a wide line of exactly compounded solid buffers covering a range from 2.0- to 12.0-pH in steps of 0.20-pH. A buffer solution is prepared by dissolving one tablet in 100 ml. of warm distilled water.

A 4½-in. dial thermometer with plastic case, is being manufactured by Taylor Instrument Cos., Rochester 1, N. Y. This thermometer is well suited for installations requiring a long length of tubing between the bulb and the instrument. The plastic case is resistant to corrosion and shock. This mercury-actuated dial thermometer is available in a wide range of standard temperature-sensitive bulb constructions.

Mill Maintenance TO KEEP 'EM RUNNING

Transformer Oil

The oil used with a transformer should be either that originally supplied or an oil specifically approved by the manufacturer. According to "Hints on Electrical Maintenance of Transformers," issued by Westinghouse Electric & Mfg. Co., the primary requirements of oil are:

(1) High dielectric strength.

(2) Freedom from inorganic acid, alkali, and corrosive sulphur to prevent injury to insulation or conductors.

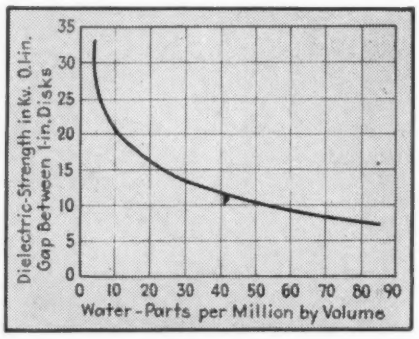
(3) Low viscosity to provide good heat transfer.

(4) Good resistance to emulsion so that the oil will throw down any moisture entering the apparatus instead of holding it in suspension. (Water in suspension is a menace to safe operation.)

(5) Freedom from sludging under normal operating conditions.

The principal causes of deterioration of insulating oil in service are water and oxidation. The oil may be exposed to moisture through condensation from moist air due to breathing of the transformer, especially when the transformer is not continuously in service. The moist air drawn into the transformer condenses moisture on the surface of the oil and on the inside of the tank.

Oxidation causes sludging, the amount of sludge formed in a given oil being dependent upon the temperature and the time of exposure of the oil to the air. Excessive temperatures may cause sludging of any transformer oil.



Relation between dielectric strength and amount of water in insulating oil.

Few maintenance men realize how a minute quantity of water will spoil the insulating qualities of oil. The curve shows that a fraction of a teaspoonful of water in a barrel of oil will make it necessary to retreat the oil.

Welding in Textile Mills

Maintenance crews in textile mills frequently have occasion to weld or cut piping and equipment already in place.

Welding or cutting work done with portable gas-welding equipment in temporary locations, according to a booklet issued by International Acetylene Association, is apt to cause fires unless suitable precautions are taken, as listed:

1. Keep flames, sparks, molted slag and hot metal from coming in contact with materials that will burn.

Don't let this happen. Protect wooden floors, walls, ceilings, and other structures near the work by sprinkling water on them, and, if possible, cover them with asbestos cloth or sheet metal.

2. Never use cutting or welding torches where sparks or an open flame of any kind would be a hazard—such as around cotton.

3. Before you cut or weld in a new location for the first time, always check with the nearest foreman or superintendent in authority.

4. Take cutting or welding work which can be moved to a location where there will be no possibility of setting fires.

5. Use sheet metal guards, asbestos paper or curtains, or similar protection to keep sparks close in to the work you are doing.

6. Sweep wooden floors clean and wet them down before starting work.

Preventing Mildew on Painted Surfaces

Some textile mills are frequently troubled with mildew forming on painted surfaces. An article appearing in a recent issue of *The Dutch Boy Painter*, published by National Lead Co., discusses this problem.

Before any mysterious discoloration is put down as mildew, it is well to diagnose the case. A rather careful examination is required. If it is merely dust or dirt, the spot can be cleaned rather easily. Mildew, on the other hand, is hard to rub off. It is well anchored in the paint coating. With a strong pocket-type magnifying glass it usually is possible to identify the individual growing spores.

If the discoloration is identified as mildew, the first step is to remove with a stiff brush as much of the growth as possible. Then give the surface a scrubbing with a prepared paint cleaner used in a solution as recommended by the manufacturer. Follow by rinsing with clear water.

After the surface is dry, the job may be repainted. For the first coat use a mix consisting of 100 lb. of soft paste white-lead, 2 gal. of linseed oil and 2 gal. of pure turpentine or mineral spirits. This makes 7¼ gal. of paint and will cover about 700 sq. ft. per gal., one coat. To help check further mildew growth, add about 7 oz. of mercuric chloride (corrosive sublimate) to this first coat of paint. A good way to prepare this chemical—a very poisonous one—is to dissolve it in warm alcohol. Place some alcohol in an unbreakable container and heat it in a pan of boiling water, but not over or near an open flame. Dump the mercuric chloride into the alcohol and stir it until completely dissolved. Pour this solution into the batch of paint and mix it in thoroughly so that it is uniformly distributed.

When the first coat of paint is dry and hard the finish coat can go on. This coat should be mixed on the basis of 100 lb. of soft paste white-lead, 2½ gal. of linseed oil and 1 qt. of pure turpentine or mineral spirits. This mix makes 6 gal. of paint and will cover about 700 sq. feet per gal. This paint, too, should be fortified against mildew growth by the addition of about 6 oz. of mercuric chloride, added as described previously. If it is inconvenient to prepare this chemical in the manner mentioned, a very thin paste of the mercuric chloride may be made using a small amount of linseed oil and turpentine; then add this paste to the batch of paint as outlined previously. Again, handle the mercuric chloride carefully—it is a deadly poison.

As a general rule, mildew is less likely to form on hard paint films than on soft. The paint suggested provides a reasonably hard film, yet it retains the quality of elasticity which is necessary to prevent cracking and scaling which are not merely blemishes like mildew but are costly paint failures.

DYES & CHEMICALS

PRODUCTS & PROCESSES

Mildewproofing Agent

TEXTICIDE M. Atlantic Stampruf Co., Inc., 258 Main St., Chatham, N. J.

Texticide M, a mildewproofing agent, is offered to the textile industry in liquid and powder form, and the company states both may be used in water or solvents. No critical ingredients are used, and therefore no priority is required. One percent of this product on the weight of the fabric mildewproofs to army standards of efficiency, it is claimed. As a result of tests made by an individual laboratory on the concentrates, the manufacturer asserts that the product is non-toxic and therefore non-irritating to the human skin.

Vat Dyeing Assistant

AQUAVAT; Aqua-Sec Corp., 1450 Broadway, New York.

This product is offered to vat dyers as an assistant in the caustic and hydrosulphite bath. When it is added to the jig, the manufacturer says, "This product is a reducing agent that maintains solutions of vat dyes in a reduced form and inhibits oxidizing action. It is chemically inert and is not effected by oxidation, reduction, or alkalinity. Goods dyed with this product possess a full, soft hand. The amount to be used varies: on light shades approximately 20% of the weight of the dyestuff, while on heavy shades the amount can be decreased to 10%."

Melamine Resin

AEROTEX M3; Calco Chemical Division, American Cyanamid Co., Boundbrook, N. J.

This product is a melamine resin, which, it is said, will impart crease resistance, shrinkage control, fiber stability, and "hand" to rayon fabrics.

The resin finish is applied by impregnating the goods in a mangle, with subsequent drying and curing, followed by a light soaping.

It is pointed out that the resin possesses the following advantages: (1) creaseproofing affects can be obtained with less resin than heretofore has been necessary, resulting in crisper and a less heavy "hand;" (2) it has improved stability over other types; (3) unpleasant formaldehyde odors are greatly diminished in the application operations; and (4) it requires a comparatively short curing time.

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Your identity will not be published unless you give permission.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ THIS MONTH'S PRIZE WINNER

Deep Reed Mount for Weaving Split Baskets

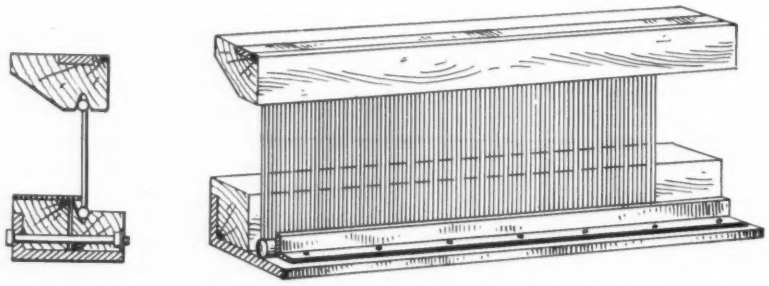
Considerable trouble is usually experienced in weaving true split baskets. There are many substitutes and imitation weaves, but there is only one way to make a "genuine" split basket; and that is to use a specially built, fine, flexible reed in which the warp ends can be reeded two ends per dent.

The wire should be very fine and wide, so that it will be flexible and allow the knots to pass through without breaking. These reeds usually run from 25 to 30 dents per inch and should be at least 6 to 7 in. high. Although they are expensive, they will soon pay for themselves, as the cost of mending a reed cut with a rolled end will more than cover the cost of one reed.

In the illustration is shown the type of reed back stay with which most looms are equipped. Although this is suitable for standard-sized reeds, it will not allow a 6- or 7-in. reed to drop low enough. In order to secure the maximum benefit of a fine reed, it should be arranged so that the warp ends will pass through the middle, where the wire dents are flexible and allow the knots to go through without breaking the ends.

Numerous methods are used, but one of the simplest and most effective arrangements is shown in the illustration below. To make this arrangement, the reed back stay should be removed and put in a safe place for use on regular work. Then a piece of 1¼-in. angle iron should be cut the length of the reed back. Drill $\frac{5}{16}$-in. holes approximately 12 in.

(*Continued on page* 136)



Drawing shows conventional reed mounting and special mounting for high reed for special weaves.

Colored Threads Used To Denote Shift Change

Stamps, pencils, and crayons are among the devices used to mark cloth to denote shift changes. The mark should be made close to the selvage but it is not rare to find these shift-marks well in the body of the cloth. Often the markings are much larger than they should be. Then, too, there are times when no markings should be placed on the cloth such as when finishing is not done or when finishing consists of processes which do not remove the marks.

We have found that short pieces of colored strings can be placed in the selvages to mark the shift changes, provided the cloth is not to be sheared before inspection. The strings are pulled out by the inspectors and this prevents the shift marks from causing trouble in finishing. We use red, white, and blue strings to denote the three shifts. (*K-128*)

What's Going On Here?

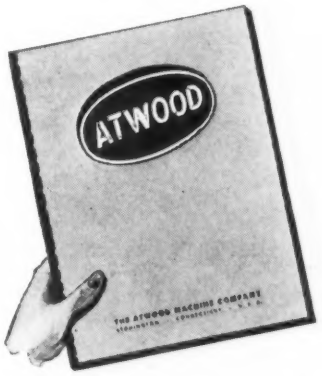
ARMY E NAVY

Now with 3 stars

It Will Pay You To Find Out, If You Have Anything To Do With The Postwar Production Of Cotton, Worsted, Rayon, Spun Rayon, Silk, Nylon or Combination YARNS.

ATWOOD engineering and development work has been carried steadily forward all the time we've been earning *three* stars on our "E" pennant. The new Atwood Ring Twisters, Up Twisters and other yarn preparation equipment are going to give you an entirely new set of production standards.

Now is the time to check up on what's going on here at ATWOOD. You'll find it highly interesting and profitable to get in touch with us and get the whole story as it applies to *your* yarns and *your* production needs.



The new ATWOOD Catalog contains information and referance data of real value to every yarn producer. A letter on your company stationery will bring you a copy by return mail.

THE
ATWOOD
MACHINE COMPANY

STONINGTON CONN., U. S. A.

SALES OFFICES: STONINGTON • CHARLOTTE • LOS ANGELES • MANCHESTER, ENGLAND • BUENOS AIRES
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KINKS & SHORT-CUTS

(Continued from page 134)

Deep Reed Mount for Weaving Split Baskets

(Continued from page 134)

apart. These holes should be filed to $\frac{1}{4}$ in. oval so that the angle iron will be adjustable. Place a reed in the loom and clamp the angle iron at each end to the bottom of the lay with a screw clamp, allowing about $\frac{1}{32}$-in. clearance between the reed and the race plate. Mark the center of the oval hole with a center punch and, after removing the reed and angle iron, drill a $\frac{3}{16}$-in. hole through the lay. On the W3 and W2 looms, a 5 x $2\frac{1}{4}$ x $\frac{3}{8}$ angle iron is used to support the lay. With this type of loom, a $1\frac{1}{4}$ x $\frac{5}{16}$ cap screw with a flat iron washer on the top and a lock washer and nut underneath is used to hold the $1\frac{1}{4}$-in. angle iron to the lay.

With older type looms having a wooden lay, a $\frac{5}{16}$-in. bolt may be used to hold the angle iron. If the reed is too low with this arrangement, a piece of wood cut $\frac{3}{4}$ in by $\frac{1}{2}$ in. the length of the lay may be placed under the reed. For best results, the reed should be installed so that there is a little clearance between it and the race plate. This may be accomplished by loosening the nuts and adjusting the angle iron. The reed cap should not be driven down on the reed, as this will distort the dents and cause reed marks. *Eugene P. Schremp, Lawrence, Mass. (K-205)*

Batcher Designed for Paper Backgray

Cotton backgrays are not available for the duration. This makes it necessary for textile printers to use paper backgrays. This gave rise to the problem in our mill of how to batch these grays without purchasing extra tubes. Finally, after giving the problem considerable thought I devised the set-up shown in the accompanying drawings, which made is unnecessary for us to buy extra tubes by allowing the paper back to be rolled without tubes being used.

In the plan view of a two-roller batcher, Fig. 1, can be seen the tapered outline of the wooden shells or cones that hold the paper. A lock nut, Fig. 2, on the square bar serves as a hammer to loosen the cones when the roll is doffed. A side view is shown in Fig. 3. *(K-8).*

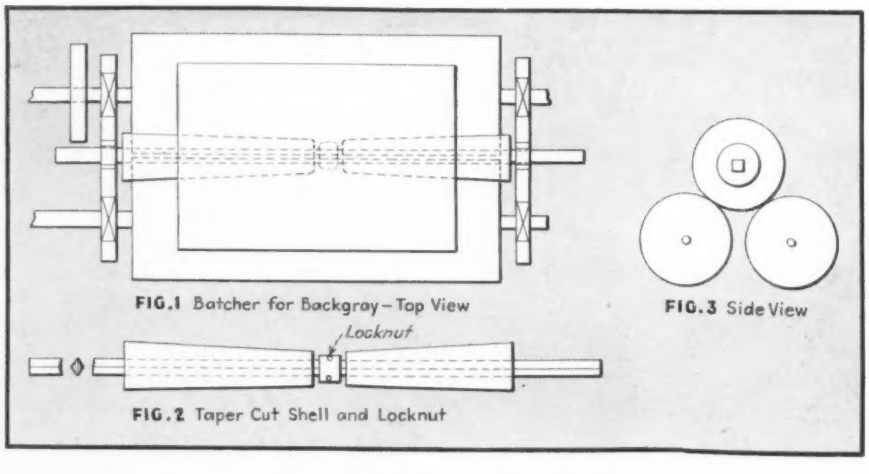
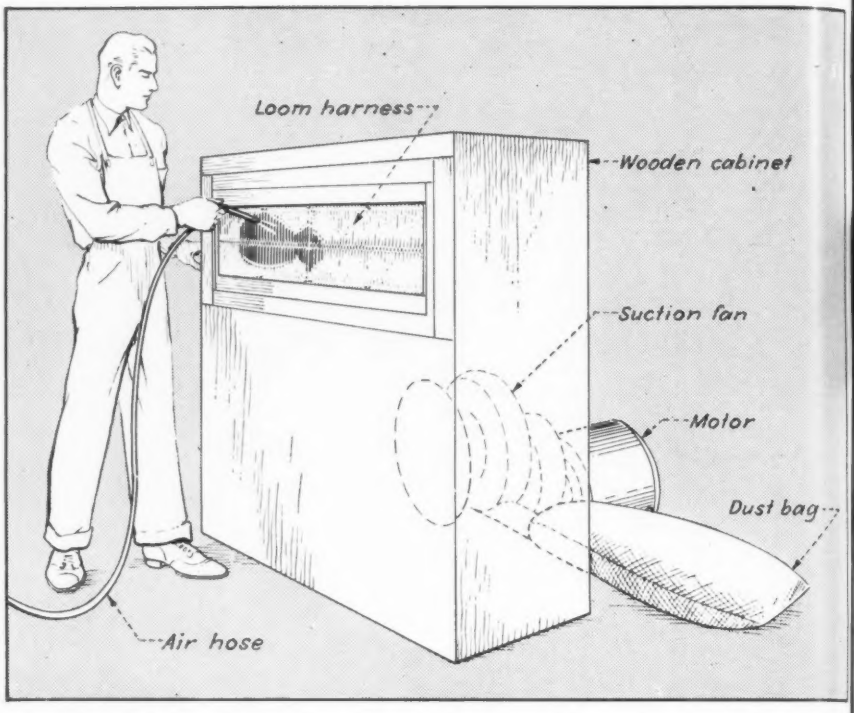


FIG. 1 Batcher for Backgray—Top View

FIG. 2 Taper Cut Shell and Locknut

FIG. 3 Side View

CABINET KEEPS LINT DOWN



These views show a cabinet with suction fan to gather lint as it is blown off of harness by the man cleaning the harness with air hose. This arrangement keeps lint from being blown about room, onto warps and equipment nearby. The cabinet can be constructed of wood and the fan and motor can be any available that will give sufficient suction. (K-204)

Talc and Brush Used To Save Shuttle Fur

Fur used in various textile departments is becoming an expensive item, especially in the weave shed. Among the many little tricks one can use to save fur is a method I devised to brush out shuttle fur that has become matted or flattened out and appears lifeless. This simple trick requires a small wooden box, a wire brush, and some sweatless powder or talc.

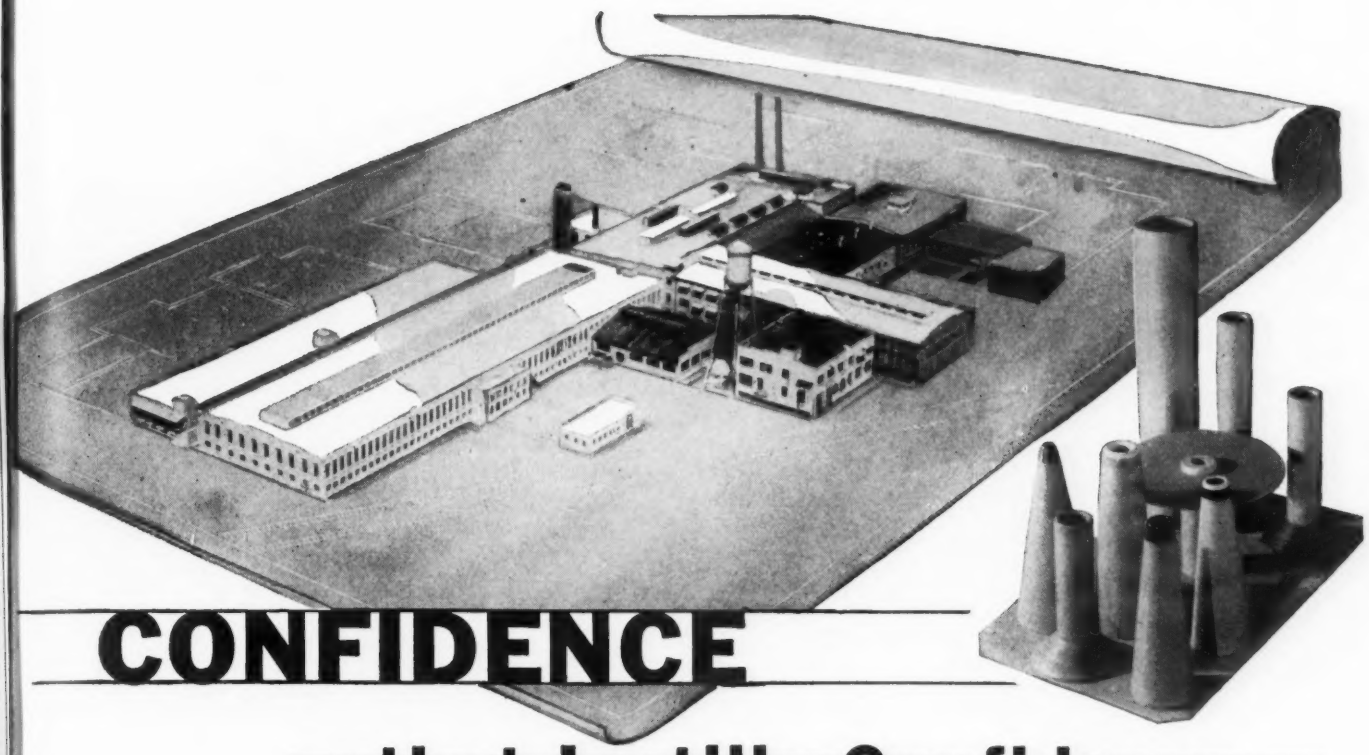
The box is made of the following dimensions: 16 in. long by 8 in. wide by 6 in. deep. It can be constructed from $\frac{1}{2}$-in. stock or $\frac{1}{4}$-in. plywood.

Fill the box about one-third full of powder or talc. (When not in use, the box and powder can be kept inside the workbench away from moisture; otherwise the powder will cake up and will have to be renewed.)

When shuttles are being worked on, or when weavers call the fixer because of shuttle trouble due to flattened-out fur, the fur is examined to see if it can be brought back to usefulness. If the fur is merely matted or flattened and shows little wear, the shuttle is held over the box and powder sprinkled over the fur.

Using a small wire hand brush or small stiff-bristle brush, the powder is

(Continued on page 138)



CONFIDENCE

that Instills Confidence

Through the years, as an important supplier to the Textile Industry, we have demonstrated our own confidence in its future by making long range preparations for continued and improved service.

Without our effective plans as completed before the war, we could not have held the confidence of the Textile Industry. As it is we have maintained uninterrupted and dependable services throughout periods of extreme demands—in the face of serious production problems. Thus by having confidence in the customers we serve we have gained their confidence for our products and services.

ARMY E NAVY

SONOCO MAKES *EVERYTHING*
IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

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DEPENDABLE SOURCE OF SUPPLY

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MOVES THE WORLD
PAPER CARRIERS

A CRITICAL NEED
SAVE
WASTE
PAPER

KINKS & SHORT-CUTS

(Continued from page 136)

worked into the fur and brushed down to the hide. This action brushes out grease, sizing, and other dirt accumulated on the hairs, and brings the fur back to its original, soft nature.

After brushing, tap the shuttle gently so that surplus powder falls back into the box. Now work out with the brush the powder still remaining. Wipe off and polish shuttle. *(K-195)*

Motor Stands Used For Covering Rollers

We have found that by using two motor stands, a good holder can be made for covering take-up drums and rollers. The two motor stands are secured together by three long rods as shown in the sketch. Warp-stand brackets are fastened at the top to hold the drum or roller.

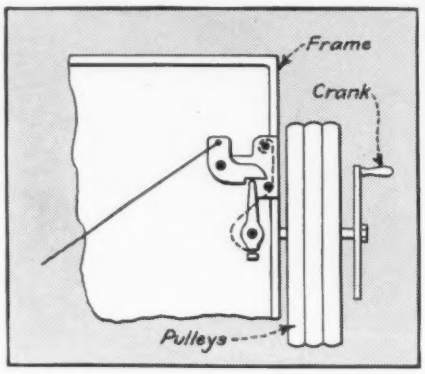
In covering drums or rollers, place the drum in the position shown. Remove all the old covering. Place on glue or other adhesive agent and apply new covering. The recovered drum can be left on the stand for drying if desired.

This stand can be moved to any desired location, or it can be bolted down to floor permanently. *(K-198)*

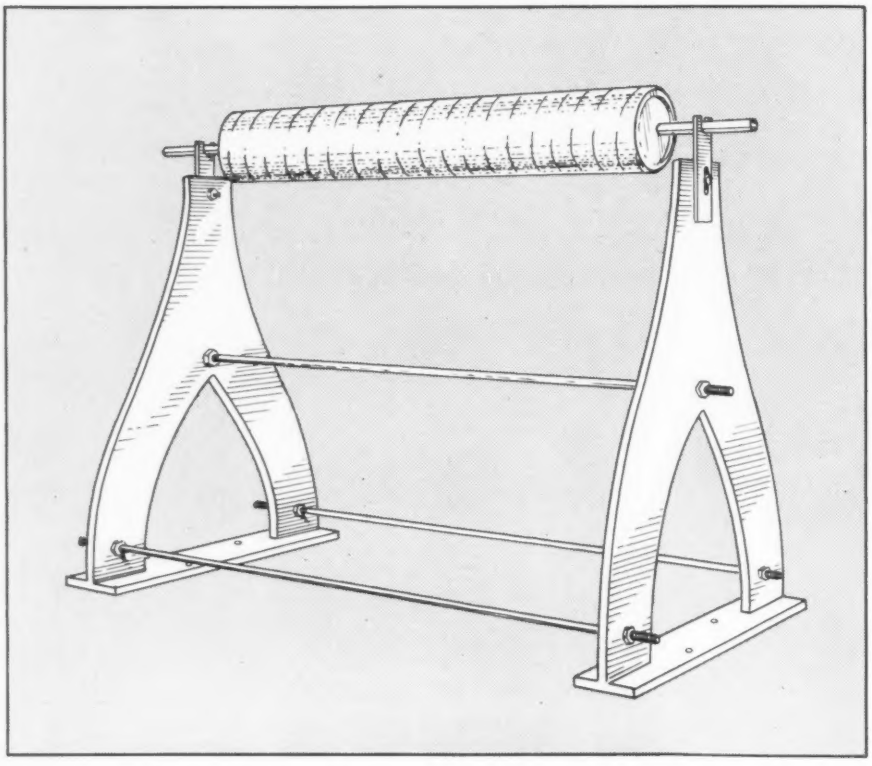
Changing Stop-Motion Spring Cuts Breakage

On some Scott & Williams HH machines with the large pulleys, we have had trouble with the belt sliding off the high-speed pulley, in against the frame, and breaking the stop-motion engaging spring which it cannot fail to strike. When this occurs, the machine is without protection and may break a great many needles before it is stopped.

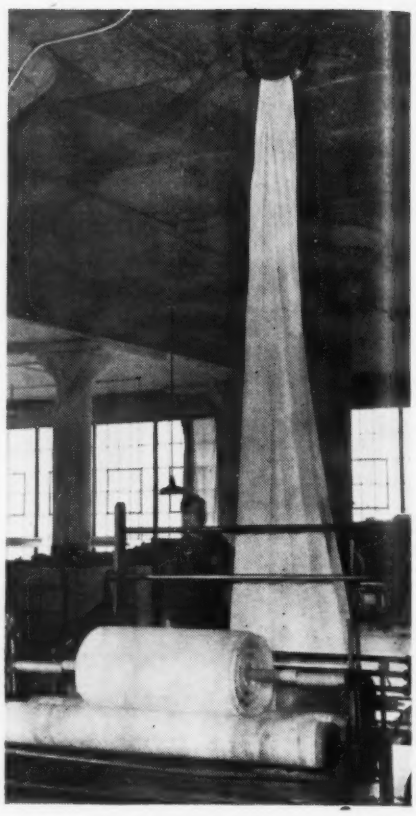
To avoid such needless trouble and expense, I have removed the original coil spring at this point and installed a steel wire spring on the inside (or left) of the stop-motion clutch release arm. This spring exerts a similar pressure, is very positive, and is not subject to damage by the belt. Dotted line shows position of the spring. *(K-216)*



Spring shown in dotted line is less likely to be broken.



Device for covering drums can be stationary or portable.



Two men used to be needed to straighten cloth which is now done by hoop.

Cloth Straightened By Hoop From Ceiling

The U-shaped hoop seen jutting from the ceiling in the accompanying illustration keeps cotton cloth straight and unwrinkled as it is rolled up. Formerly two men were needed to guide the cloth. This kink happens to be one of many that have been submitted by civilian employees to the Army. *(K-181)*

Changing Foot Pedal Beneficial to Worker

The two foot pedals on the Barber-Colman tailing machine are rather short and the operator has to stand in an awkward position while using the stripper or the waste winder. This places a strain on the leg she is standing on and the operator becomes tired easily. Most people find it unhandy to try to push the pedals with the left foot and hence shift this strain from left to right occasionally, or even sit down on a stool while working. This becomes quite a problem to the operator who has to run this machine 8 hours a day, 6 days a week.

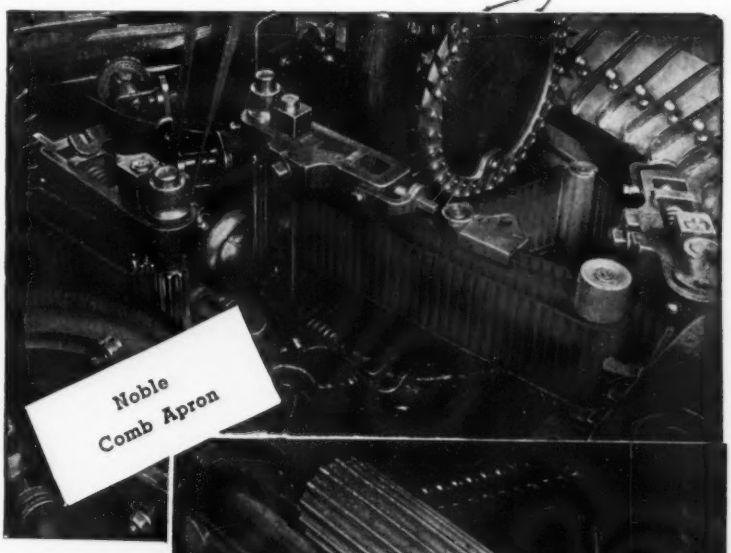
To relieve this fatigue as much as possible, we lengthened these pedals eight inches and cut a hole in the floor under the pedals about ¾ in. deep to

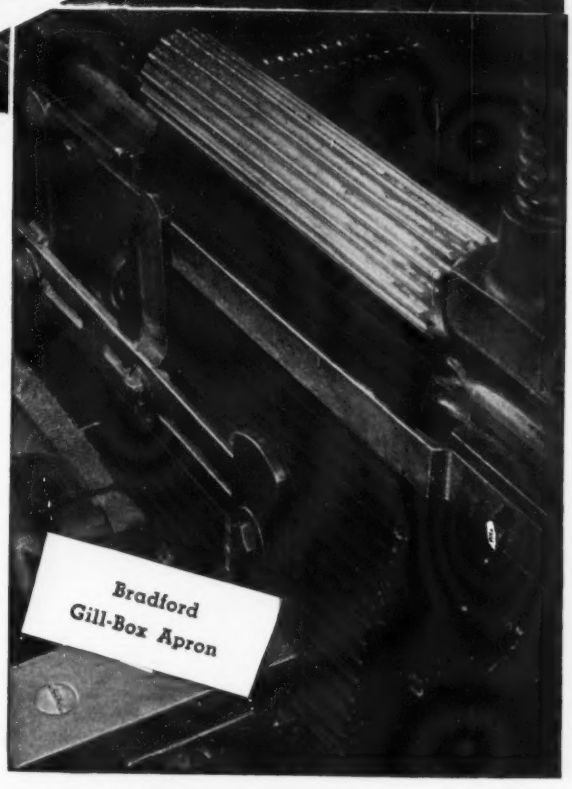
(Continued on page 140)

WORSTED APRONS

FOR BRADFORD COMB AND GILL BOXES

are Fussy things.





Not only must they be of even thickness throughout, have minimum stretch, run straight, and have waterproof laps which are strong, flexible, and of even thickness overall—as in all Barnes aprons—they must provide a certain fussy relation between their surfaces and the wool fibers which they grip. The aprons must grip the wool gently but firmly and carry it forward in just the manner which assures a properly made yarn.

Does it strike you as strange that so many attempts to produce satisfactory aprons from substitutes and even from the best leathers by inexperienced hands have failed? It shouldn't, because the fussy relationship of which we speak can be attained only through long research and many years of experience in worsted problems.

Barnes buys the right leather and gives it the right processing. Our apron leather is tanned from finest Foreign and Premium Domestic Steer Hides in our own tannery, and only the most selective hide area is used, clear of all hide imperfections.

Barnes' aprons are hand processed throughout and are thoroughly seasoned before shipping.

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience

APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

KINKS & SHORT-CUTS

(Continued from page 138)

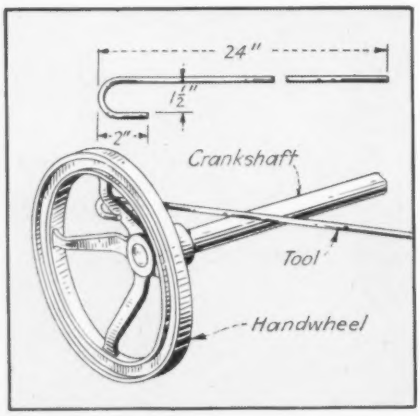
keep the height above the floor at a minimum, and at the same time to give the pedal a stroke long enough. Consequently, the operator can stand in a more natural position while working the stripper or waste winder and tires less easily.

The tension on the channel spring (TMF 22) should be kept at a minimum to make the operation of the stripper as easy as possible. I found that I could replace this spring with a much weaker spring and still get satisfactory results. (K-137)

Handy Pressure Tool for Moving Handwheels

The illustration shows a handy tool designed for exerting pressure on handwheels where shaftings, etc., may have stuck and resist desired settings.

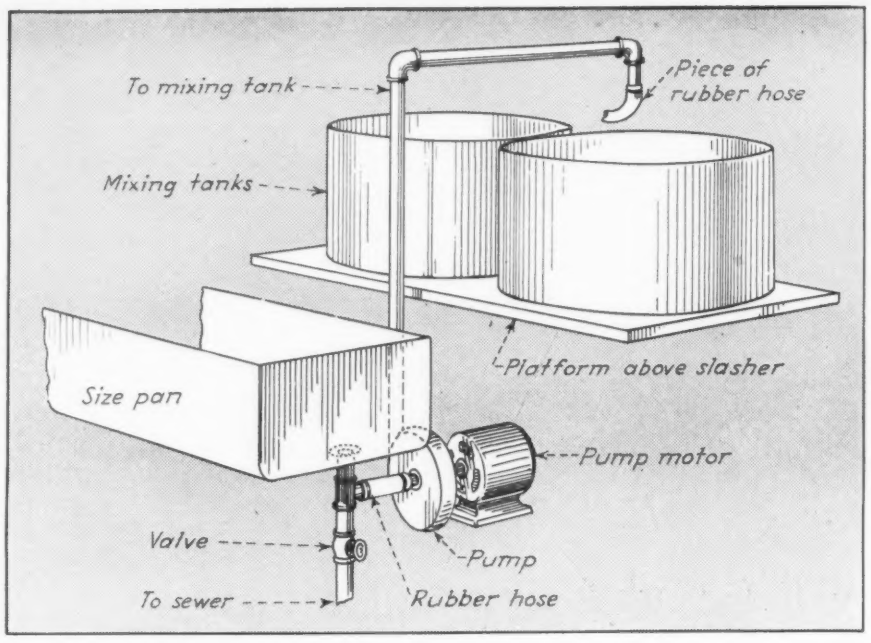
For instance, when setting harness timing with the crankshaft, the set screws are slightly loosened on the timing gear in order to turn the crank shaft to the required position. If the timing gear is frozen fast, or a set screw broken, freezing the gear onto



Pressure tool is made from 1-in. steel rod.

the shaft, this pressure tool can be used by locking it around the spoke in the handwheel. A slight pressure should easily turn the crankshaft the desired amount.

The measurements shown are found ideal for the "S" looms, and can be slightly altered, if necessary, for other type looms. To use, loosen set screws, insert tool in handwheel and lock timing gear with a wrench or screw-driver. Pressure on the handle forces the shaft forward or backward as required. (K-130)



Gelatin is saved by system for reclaiming size left in size pan.

Saving Size Materials With Piping and Pump

The comparatively high cost and shortage of gelatin and other materials used in the sizing of rayon warps has caused mills to give thought as to how to save the 30 gal. or so of the size solution that remains in the size pan when the slashers are stopped for any length of time.

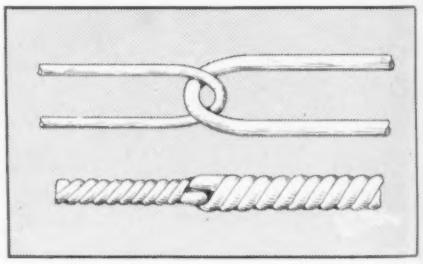
Some mills have started to drain off the size solution into buckets in order to take the size solution back to the mixing tank. However, a modern recovery system, which will result in considerable saving of materials, time, and labor can be installed in any slashing department at little expense. Such a system, as illustrated in the accompanying diagram, will not only give good results, but will also meet with the approval of the employees in the slashing department, as it involves no extra work on their part. The bucket method is extra work, because it requires the carrying of the size solution to the main mixing tank.

A pump is installed directly under the size pan between the size pan and the first drying can. A "T" is installed at the size-pan outlet that goes to the sewer, above the drain valve. A piece of rubber hose is fastened to the nipple on one of the "T" outlets, and the other end of the hose is fastened to the intake of the pump. A pipe is run from the outlet of the pump to the mixing tank on the platform above the slasher. As most mills have two mixing tanks, a piece of rubber hose is fastened to the end of this pipe in order that the size solution can be brought back to either mixing tank. The rubber hose must be just long enough so as not to extend too far into the mixing tank, otherwise, it will siphon the solution back to the size pan when the pump is stopped. The pump will need no priming, as the size solution will flow by gravity to the pump until the pump is started. When the size pan is empty, the pump is stopped and the sewer valve opened, so that the water used to wash the size pan and rubber rolls can be drained off. (K-201)

Doubling Unknown Yarn Aids in Identification

This kink for comparing yarn sizes is not new, but will be of interest to those who have not heard of it.

When looking at two strands of yarn, one often finds it difficult to tell whether or not they are of the same size. A more accurate comparison, however, can be made by looping a number of strands of one yarn with an equal number of strands of the other and twisting tightly. Any difference in size is thereby magnified and easily seen.—(K-160)

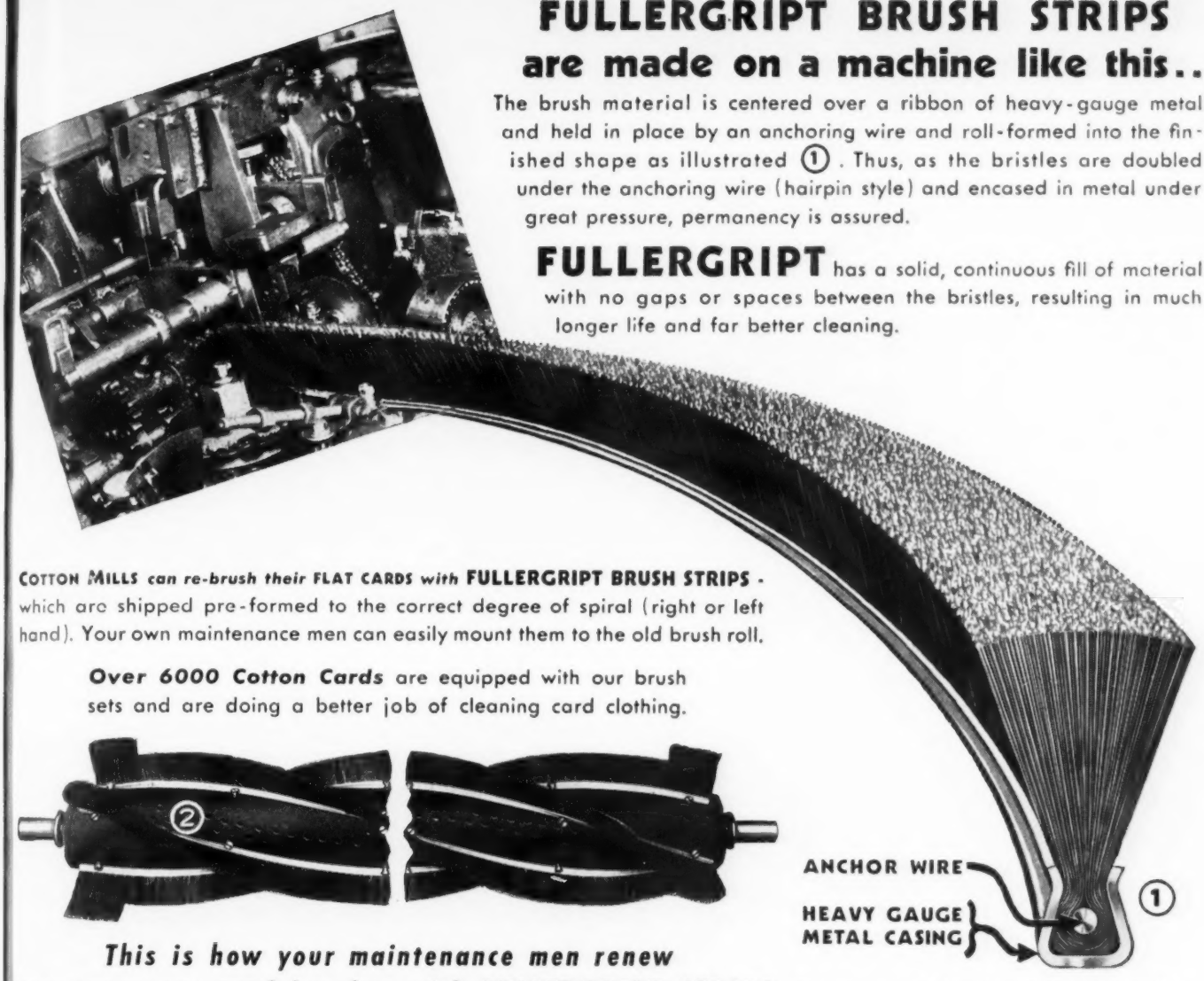


Plying yarn magnifies differences.

FULLERGRIPT BRUSH STRIPS
are made on a machine like this..

The brush material is centered over a ribbon of heavy-gauge metal and held in place by an anchoring wire and roll-formed into the finished shape as illustrated ①. Thus, as the bristles are doubled under the anchoring wire (hairpin style) and encased in metal under great pressure, permanency is assured.

FULLERGRIPT has a solid, continuous fill of material with no gaps or spaces between the bristles, resulting in much longer life and far better cleaning.



COTTON MILLS *can re-brush their* FLAT CARDS *with* **FULLERGRIPT BRUSH STRIPS** - which are shipped pre-formed to the correct degree of spiral (right or left hand). Your own maintenance men can easily mount them to the old brush roll.

Over 6000 Cotton Cards are equipped with our brush sets and are doing a better job of cleaning card clothing.

This is how your maintenance men renew your worn-out card brushes with FULLERGRIPT STRIPS Put worn card brush roll in lathe centers. Trim off old tufts of bristles with a sharp knife. ② Sand-paper the roll. Apply two coats of black shellac. Drill screw holes on 8″ centers and fasten the spiralled Fullergript Brush Strips with the special screws furnished with each set of strips.

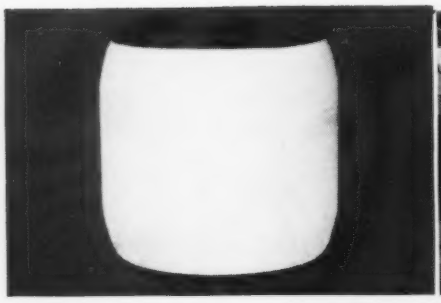
EVERY WEEK some *COTTON MILL* in the United States installs one or more sets of *FULLER FLAT CARD BRUSH STRIPS*

Manville Jencks, Manville, R. I.

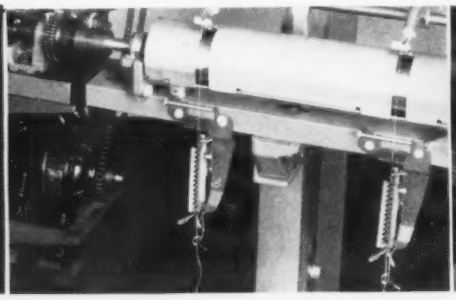
THE FULLER BRUSH COMPANY
INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.

What Happens Here *Simplifies* Sizing and Coning of Nylon

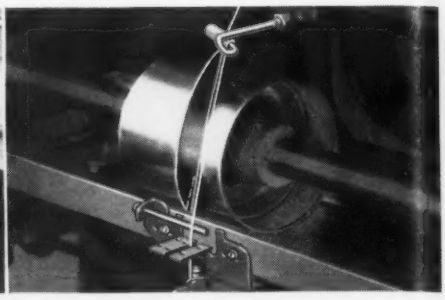
How the Universal System of Sizing and Coning Nylon Produces Quality Packages at Lowest Costs



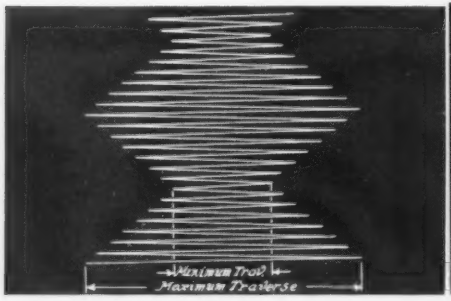
The Universal No. 250 Sizing Machine winds large-diameter tubes in which yarn is evenly and thinly distributed for uniform, rapid conditioning.



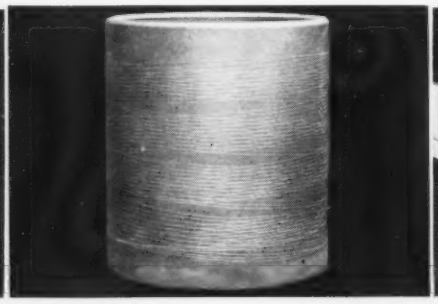
Tension is applied *before* sizing. Since the yarn travels thereafter almost in a straight line and yarn speed change is slight, there is little change in tension.



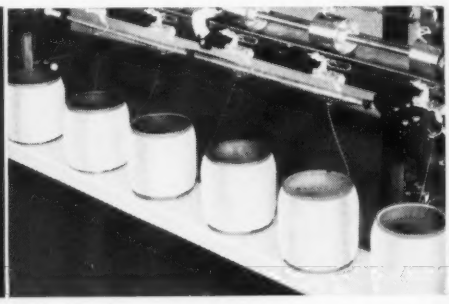
Percentage of size pick-up is easily and accurately maintained by controlling the amount of yarn contact and the speed of the roll.



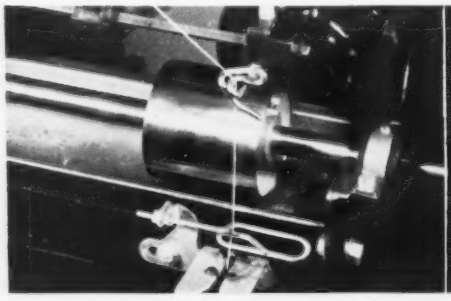
A special cam alternately lengthens and shortens the traverse to produce tapered selvedges, providing free delivery on the coning machine.



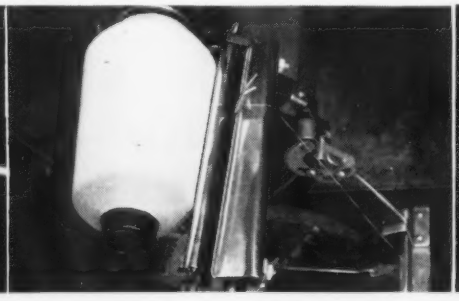
Use of four winds during each traverse limits yarn oscillation and reduces movement of reciprocating parts, thus minimizing wear.



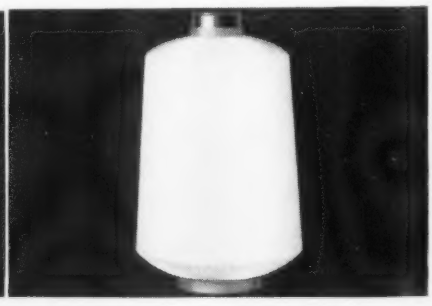
The Universal Sizing Tube is used as a direct supply to Universal No. 50 Coning Machine. No re-draw operation is necessary.



Easy adjustments obtain the desired amount of oil pick-up. Yarn travels in nearly a straight line, and contact points are few, to minimize tension.



The extremely simple Pineapple Coning attachment has the Roller Bail, kept true-running by the reinforced Roller Bail Holder.



The Universal Pineapple Cone is considered the ideal shape for a package supplying knitting machines with Nylon yarns.

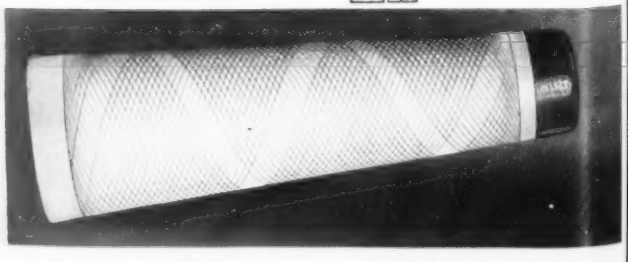
Universal Winding Company

23-4-18

Reg. U. S. Pat. Off.

PROVIDENCE
BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

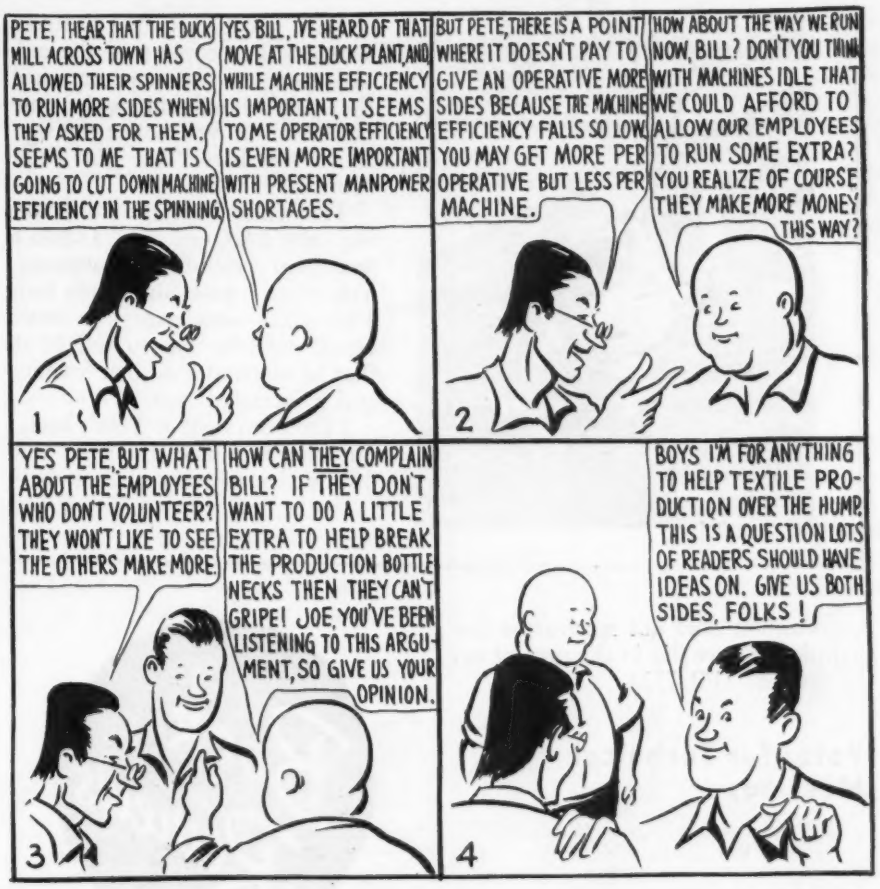
MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRECISE-WOUND ON THE FLEXIBLE 50



Pete & Bill

VOLUNTEERS FOR LARGER WORK-ASSIGNMENTS

Should workers, who volunteer to run larger assignments to relieve the bottleneck on war production, be given extra machines or held to standard jobs?


PETE, I HEAR THAT THE DUCK MILL ACROSS TOWN HAS ALLOWED THEIR SPINNERS TO RUN MORE SIDES WHEN THEY ASKED FOR THEM. SEEMS TO ME THAT IS GOING TO CUT DOWN MACHINE EFFICIENCY IN THE SPINNING.
YES BILL, I'VE HEARD OF THAT MOVE AT THE DUCK PLANT, AND WHILE MACHINE EFFICIENCY IS IMPORTANT, IT SEEMS TO ME OPERATOR EFFICIENCY IS EVEN MORE IMPORTANT WITH PRESENT MANPOWER SHORTAGES.
1
BUT PETE, THERE IS A POINT WHERE IT DOESN'T PAY TO GIVE AN OPERATIVE MORE SIDES BECAUSE THE MACHINE EFFICIENCY FALLS SO LOW YOU MAY GET MORE PER OPERATIVE BUT LESS PER MACHINE.
HOW ABOUT THE WAY WE RUN NOW, BILL? DON'T YOU THINK WITH MACHINES IDLE THAT WE COULD AFFORD TO ALLOW OUR EMPLOYEES TO RUN SOME EXTRA? YOU REALIZE OF COURSE THEY MAKE MORE MONEY THIS WAY?
2
YES PETE, BUT WHAT ABOUT THE EMPLOYEES WHO DON'T VOLUNTEER? THEY WON'T LIKE TO SEE THE OTHERS MAKE MORE
HOW CAN THEY COMPLAIN BILL? IF THEY DON'T WANT TO DO A LITTLE EXTRA TO HELP BREAK THE PRODUCTION BOTTLE NECKS THEN THEY CAN'T GRIPE! JOE, YOU'VE BEEN LISTENING TO THIS ARGUMENT, SO GIVE US YOUR OPINION.
3
BOYS I'M FOR ANYTHING TO HELP TEXTILE PRODUCTION OVER THE HUMP, THIS IS A QUESTION LOTS OF READERS SHOULD HAVE IDEAS ON. GIVE US BOTH SIDES, FOLKS!
4

LETTERS TO PETE & BILL are paid for when published, without regard to length. We use letters (not over 200 words) discussing material in this department or any other pertinent matter. Contributions of greater than specified length may be given consideration as articles. Suggestions for the Pete & Bill dialogue are also welcome and if used will be paid for. If these pages interest you, contribute something to them to interest others. Address PETE & BILL, Textile World, 330 West 42nd Street, New York 18, N. Y.

Letters From Readers

Management Should be Sole Selector of Supervisor

"Picking a New Supervisor"
(Pete & Bill, June, 1944)

Dear Pete & Bill:

Absolutely, the management should use its own judgment in choosing new overseers or second hands because of several reasons: First, if one were to go to buy a new suit or car, should he call on, say, a hundred people to help pick it out? No, he wouldn't because four times out of five, no two people would have the same choice, and after all he is buying the car or suit for his own interest. The same holds true in a business of any type; no two employees would have the same choice for an overseer or second hand. The person whom one employee liked would be disliked by the other. Also the employee who was successful in picking out the one he liked would try to get by with things the others couldn't.

If the business was owned and controlled by the employees, it *might* work, but where there are several stockholders and none of them is working at what is called common labor, it is out of the question for employees to select their supervisors. (PB 171)

Should Vary Method of Picking Supervisors

"Picking a New Supervisor"
(Pete & Bill, June, 1944)

Dear Pete & Bill:

In the textile business the method of appointing new supervisors seems to change periodically. Manufacturers for a time will promote from inside the plants and then will switch to bring outsiders in. Both methods have merit, but I don't think either has sufficient merit to warrant adoption as standard policy.

I don't think a man who has spent all his time in one mill is the logical man to promote in most cases because he has become so much a part of that organization that he is totally unaware of other methods, much to his own disadvantage. A man spending ten years in one plant may be quite valuable, but a man spending two years in each of five different plants over a period is much more valuable, all other elements being equal.

The man on the inside has an uphill battle the minute he is promoted to supervisor particularly if there are six other men in the department who think they should have had the job. On the other hand the incentive to effort of possible promotion must not be removed, and I therefore consider it very unwise for any manufacturer to adopt a standard policy for promotions of this nature. Long service with an

MEMORIES OF OLD MAN CARELESSNESS—*By Martha Pittenger*

No. 20. Behind the Bars

Have you ever visited the zoo; watched the people feed the animals peanuts and popcorn until the poor dumb things become sick? And did you notice the sign above the bars "Do Not Feed Animals?"

That's how Tom, the storeroom boy, got hurt one day. I didn't feed him peanuts nor popcorn. Yet, what I gave him made him a lot sicker—carelessness, in small doses, until he was so full of it that he received a swollen temple, and a lacerated arm.

I had been right at Tom's heels, watching him place the gears and discarded machinery upon a shelf in the storeroom in a haphazard manner.

I was still following him that day when the loomfixer sent him to get a gear. As he reached for the gear, a rod came down with it and struck him on the temple, making him dizzy. Then, to make it a juicy accident, the gear slipped and slashed his arm.

Afterward, Tom was never so free and easy with carelessness, he was no longer behind the bars that created accidents. How did I find out? Well, the next time I went into the storeroom, I discovered he had put everything in its proper place, none of the parts could fall or roll off shelves at the slightest provocation.

organization does not receive the recognition it once did in the present era of realism. (PB 172)

Votes for Technical Meetings

"Technical Meetings in Wartime"
(Pete & Bill, Feb., 1944)

Dear Pete & Bill:

Pete, you are quite right that technical meetings are helpful and should be religiously attended. If an overseer cannot leave his job long enough to attend such meetings then the doctrine that I have been reared on tells me that he cannot or isn't running his job. Is this right?

Scarcity of gasoline, as well as travel space, are legitimate reasons to be absent from these meetings, but if each of five of these key men will sacrifice one of their A gas coupons the needed gasoline will be provided, and all will be equally helped by attending the meetings.

The last two meetings where I was present were very well attended, and the audience did not come from the 200-mile distance either, and the session was very instructive even though the actual participants in the discussion were limited as usual to some dozen or so.

This time Bill is right—more problems, more attendance, more discussion—and more general aid. So let's all go to the meetings. Come along Joe! (PB 174)

Book Reviews

Contract Cancellation

LIQUIDATION OF WAR PRODUCTION, by A. D. H. Kaplan; McGraw-Hill Book Co., 330 W. 42nd St., New York; 133 pages; $1.50.

Problems involved with cancellation of war contracts and disposal of government-owned plants and surpluses are discussed in this research study of the Committee for Economic Development. Mr. Kaplan presents 41 specific points that will enter into any program if it is adequate to meet the situation.

Living Conditions in Five Textile Cities Studied

SUBSTANDARD CONDITIONS OF LIVING; Textile Workers Union of America, CIO; 15 Union Sq., New York; 94 pages.

Results of an extensive study of living costs in three New England and two southern textile cities are reported. Cities covered are: New Bedford, Mass.; Lewiston, Me.; West Warwick, R. I.; High Point, N. C.; and Henderson, N. C. Such items as food, clothing, housing, household operation and miscellaneous family needs are considered and compared with the budget for the emergency standard of living developed by WPA.

Data on Cellulose

WOOD CHEMISTRY, by Dr. Louis E. Wise; Reinhold Publishing Corp.; 330 W. 42nd St., New York; 900 pages; $11.50.

This book is another in the American Chemical Society monograph series, containing material prepared by 14 authors. Considerable space is devoted to data on cellulose, solvents, cellulose solutions, surface properties of cellulose materials, determination of cellulose, and decomposition of cellulose and hemicelluloses by microorganisms.

Other Publications of Interest to Textile Men

RECONVERSION — THE JOB AHEAD, by J. A. Livingston; Public Affairs Committee, Inc., 30 Rockefeller Plaza, New York 20; 32 pages; 10¢.

THE LABOR FORCE IN WARTIME AMERICA, by Clarence D. Long; National Bureau of Economic Research, 1819 Broadway, New York 23; 73 pages; 50¢.

NO "Snowballs"...NO STICKY DROP WIRES

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Provide Softer Warp . . . Save 5 to 10% In Slashing Costs

In slashing rayon warp, a New England fabrics manufacturer encountered difficulties with harsh warp . . . sticky drop wires . . . and the formation of "snowballs." He suspected that these troubles were caused by the softening oil which was being used and called in a Sun Engineer for advice.

As a result, Sunotex Oils were adopted and used with a well-known gelatin for size. Not only were the particular difficulties experienced with his previous softening oil overcome, but several other valuable benefits were secured.

A much better and more even warp was obtained, because Sunotex conditions the warp all through. This makes for better weaving and no ends down. He also was able to reduce his slashing costs 5% to 10%.

The Experience of Sun Engineers, in working with hundreds of textile mills on such processing problems, has led to the development of an outstanding line of textile oils. These products, combined with Sun Engineering experience, may be able to help you lick a difficult problem. A letter will bring a Sun Engineer to your plant.

The New Sun Lubrication Manual is a valuable handbook for any lubrication man. It contains dozens of proved suggestions and rules for "Getting the Most Out of Lubricants." A copy may be obtained, without cost or obligation, by writing to . . .

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HELPING INDUSTRY HELP AMERICA

FIXING Hosiery MACHINES

CIRCULAR MACHINES—Chaps. XX & XXI

REGULATING THE GORE—by Julian W. Hughes

THE PICK FINGERS swing in a quarter-circle upward and downward, depending on whether they are narrowing pick fingers or widening fingers. This action is effected by the butt of one of the needles engaging the lip on the end of the fingers. Wear occurs on the contacted point of the fingers; hence, it is necessary that these points be polished and dressed smoothly to prevent pitting or furrows. Normally, the coil springs on the spindles of these picks absorb the shock of the striking needle butts and also bring the fingers back to their normal level. Nevertheless, excessive tension can be put on these springs by the adjusting screws at the end of the spindles. This action, of course, places unnecessary wear on the picking fingers and butts, and should be prevented.

Some fixers contend that the widening picks should receive more attention than the narrowing picking fingers because the former handle two needles at a time while the narrowing picks handle only one needle at a time. These fixers overlook the fact that the widening picks are in operation during the last half of the gore and are knitting only, while the narrowing picks are in operation the entire time that the gore is being knitted. Therefore, wear is practically the same on both sets of the picking fingers.

The bumper screws on the sinker cap permit a small amount of play so that the timing of the sinker cams may be advanced or retarded, as occasion demands, in either direction while oscillatory knitting is going on. However, the ends of these bumper screws will wear slightly in time by virtue of striking the stop at the end of each stroke. When these screws are once adjusted to knit the correct texture, they should not be tampered with except to take up wear when it becomes apparent.

Komet Machine
Chapter XXI

THE "KOMET" MACHINE is primarily a rib-knitting machine, but is capable of knitting plain stitches in portions of hosiery such as the heel and toe pockets, the looper's margin, and the double sole. This double-cylinder machine, of English origin, knits rib stitches with the needles of the upper and lower cylinders knitting end to end.

Unlike the cylinder-and-dial method of rib knitting, the "Komet" uses one set of needles with a hook and latch on both ends. These are shifted from one cylinder to the other, according to the pattern set-up. The fabric in the process of knitting is controlled by sinkers instead of take-up rollers, as is the case with the conventional ribber.

THREADING A DOUBLE FEED. Correct threading of any circular knitting machine depends on the arrangement of the yarn packages on the stand and the angle at which the ends are drawn from the supply cones. First, consider the threading diagram shown in Fig. C 57. For convenience of the operative, as well as for more efficient yarn feeding, the yarn packages most frequently used are placed to the front of the stand. Hence cones Nos. 1, 2, and 3, which are the double-feed yarns and the plating yarns, are placed at the front. Cones Nos. 8, 9, and 10, which supply yarns for the heel and toes and the 1 x 1 rib-top fingers are placed to the rear.

The eyelet guides in the brackets are suspended above the yarn packages directly over the center of the cones. If the eyelet guide is not directly over the center of the nose of the cone the yarn will unwind with too much friction. And, while a certain amount of friction is desirable for good knitting, this must be applied evenly to the yarn as it passes between the tension discs. When the yarn unwinds with undue friction at the nose, as is the case when the guide is not properly plumed, the friction on the yarn feed is intermittent and will cause distorted stitches or will break the yarn.

The cone-supporting arms of the stand are adjustable to a limited extent, and accommodate packages of varying diameter. Arms are secured in place by setscrews. When cones of small diameter are being used the arms can be swung closer together to make the yarn space more compact; if large-base cones are used the arms are swung outward to prevent crowding. Also, the small brackets containing the eyelet guide may be swung around to be in line with the nose of their corresponding cones.

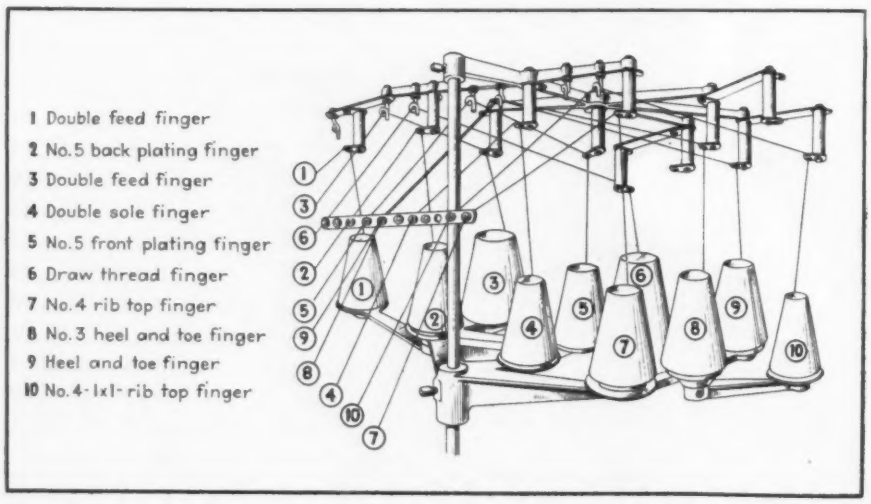
1 Double feed finger
2 No. 5 back plating finger
3 Double feed finger
4 Double sole finger
5 No. 5 front plating finger
6 Draw thread finger
7 No. 4 rib top finger
8 No. 3 heel and toe finger
9 Heel and toe finger
10 No. 4-1x1- rib top finger

Fig. C. 57. Arrangement of cones in creel of Komet machine, double feed and draw thread, plain plated setup. The two idle fingers can be used for striping.

Hidden assets for a thousand products

"From just one basic source, Hercules Powder Company has extracted a whole series of specialized products widely used in paints, varnishes, lacquers, soaps, insecticides, electrical insulators, linoleum, ink, plastics, detergents, adhesives, cement, rubber, paper coating. Only by long years of painstaking research has Hercules been able to develop the complex field of terpene and rosin chemicals."

DAVID DIETZ, *Science Editor of Scripps-Howard Newspapers, Author, Pulitzer Prize Winner*

EXTRA STAMINA FOR CONCRETE. Vinsol* resin helps keep concrete surfaces smooth and long-wearing. Interground with cement, it enables concrete surfaces to withstand scaling and corrosion due to frost and thaw and the action of ice-removing agents.

STRETCHING RUBBER SUPPLIES is one of Hercules' contributions toward rubber conservation. Solvenol* is used as a penetrant, softener, and swelling agent in the reclaiming of scrap rubber. It is now under allocation for this vital war task.

CLOSE SHAVE FOR PIGS. In packing plants, pigs are coated with a special resin, Brisgo*. When the Brisgo, applied hot, has cooled and congealed, it is peeled off like a banana skin and with it comes every hair and all the stubble.

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Round Table

With meetings of operating executives curtailed, there is need of a meeting place where mill men can discuss problems among themselves. The Round Table is designed to supply this need. It is open to all readers for discussion of subjects relating to mill management and operation. Bring your problems to the Round Table. Give other mill men the benefit of your experience, and get their ideas in return. Names of contributors to the Round Table will be held confidential if so requested. Sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Trend in Finishing is Toward Simplification

One of the highly interesting items brought out recently in an AATCC meeting on piece-dyeing was the fact that there is a definite trend among finishers to reduce the number of operations in the preparation of cloth for dyeing and finishing. On cloth that is to be dyed it has been the general practice among finishers to think that it was necessary to put the fabric through a large number of preparatory operations such as souring, desizing, and bleaching, and repeating some of these a number of times until impurities were removed and the cloth became almost pure cellulose.

From the remarks made at the meeting a number of finishers are thinking definitely along the lines of reducing the number of preparatory operations on various types of fabrics. Of course, I have known of isolated cases where reduction in the number of preparations has been discussed and tried, but not until this meeting did I definitely feel that there was general interest among finishers in this particular phase of operation. *(R-73)*

American Cotton Bales Are Poor, Says Scotsman

Being attached to a large textile firm in Scotland and being responsible for the quality and the handling of bales of cotton, I was very interested in your article in the March issue of Textile World dealing with waste in sampling cotton. In our opinion, sampling is not the sole cause of the ragged and torn appearance of these bales, as we have found from experience that American bales simply do not stand up to wear and tear like other bales. This has been a well-known fact for many years now, and the fact that no great effort has been made to improve the baling leads us to suppose that the people concerned are rather indifferent.

Over a number of years thousands of bales of cotton of all qualities, including bales from practically every cotton-growing country in the world, have passed through our hands and it has always astonished us to find that American bales are invariably received in a worse condition than any of the others. We find American bales badly pressed, making them awkward to handle and difficult to build into stacks on account of their bulkiness and unevenness; there is always the added danger of a stack of American bales tumbling down.

They are far too bulky, in most cases, for their average weight (500 lb.), which makes them more costly to handle; and we feel that it would be advantageous to compress them into a smaller but more solid bales. As an example, we give you the Sudan bale (450 lb. approx.), which in our opinion is the best-made bale, and the easiest to handle. It is completely covered with a thick, closely-woven canvas. American bales, on the other hand, are only partially covered in most cases, usually by a loosely-woven open-mesh material which is almost impossible to patch after sampling; whereas, a good strong canvas is easily patched and quite often the sampling hole requires nothing more than to be drawn together tightly with strong twine.

We suggest, therefore, new bale-presses to make up less bulky bales; and stronger more closely woven canvas to cover them completely (not partially as at present).

We hope that this matter of cotton baling will have a prominent place in the cotton growers' postwar planning so that in the years to come mill people will greet the arrival of American bales with a smile instead of with a shudder as they do now.

With regard to the proposed new system of sampling I would only say this: Every buyer naturally likes to do his own sampling, and no matter how carefully a sample was made up by a third party prior to baling, it would always be looked upon with suspicion. However, given a well-made bale this new system would be unnecessary. *(R-78)*

Confidence in Future Of Automatic Quillers

I believe that after the war, automatic filling winders will take the day. Then larger-package spinning will have its better advantage in the production of filling yarns, as well as warp yarn. Spinning larger filling yarn packages, winding on cones or cheeses, and then winding with Universal, Schweiter, Abbot, or Hacoba winders onto quills will be general practice. Other developments in cotton textile machinery is coming, and for the younger and middle-age men a new day is dawning in this field. Whether cotton stays ahead, or spun rayon, all tends to more decisive steps in manufacturing of cotton and other cellulose fibers that are definitely scientific and better controlled. (R-66)

What's In A Name?

Have you ever thought about the titles given to textile-mill supervisors and their effect on the workers? We use the title "overseer" loosely to anyone from a department supervisor to a shift foreman—which in itself is confusing. However, we are using a term that is outworn and that is definitely a hangover from the days of driving-gang bosses and overseers of large plantations that somehow conjures a mental picture of a Simon Legree.

If names produce "typed" mental

(*Continued on page* 150)

76% of opener-picker fires

caused by foreign substances

Dings Rectangular Magnet at Spartan Mills, Spartansburg, S. C. Cotton is drawn through the U-shaped duct work by suction exposing it to the face of the powerful magnet.

stop "tramp iron" with DINGS TEXTILE MAGNETS

An Associated Factory Mutual Fire Ins. Co. report based on fire records in cotton mills from 1935 to 1939, shows that 48.79% started in openers and pickers and 76% of these were caused by "foreign substances." It is not hard to understand that the bulk of foreign substances capable of causing sparks consists of iron in the form of bale ties, nails, bits of junk, etc.

The development of Dings High Intensity Electromagnets for textile mills has finally provided a highly effective means of combatting this source of fire. One mill reports 12 fires caused by iron in the year preceding installation of a Dings Magnet and only one in the six month period following the installation which would indicate that the magnet *eliminated all fires due to iron!*

Fires cost plenty in time and money — Dings Magnets will conservatively pay for themselves in six months to a year and they'll last for 40 years! Write today for complete data.

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NEW CATALOG No. 99
New 8-page catalog gives complete data on Dings Rectangular Magnets and Magnetic Pulleys. Includes diagrams of installations at leading mills. Write for your copy now.

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CLINTON
COMPANY
CLINTON, IOWA

(*Continued from page 148*)

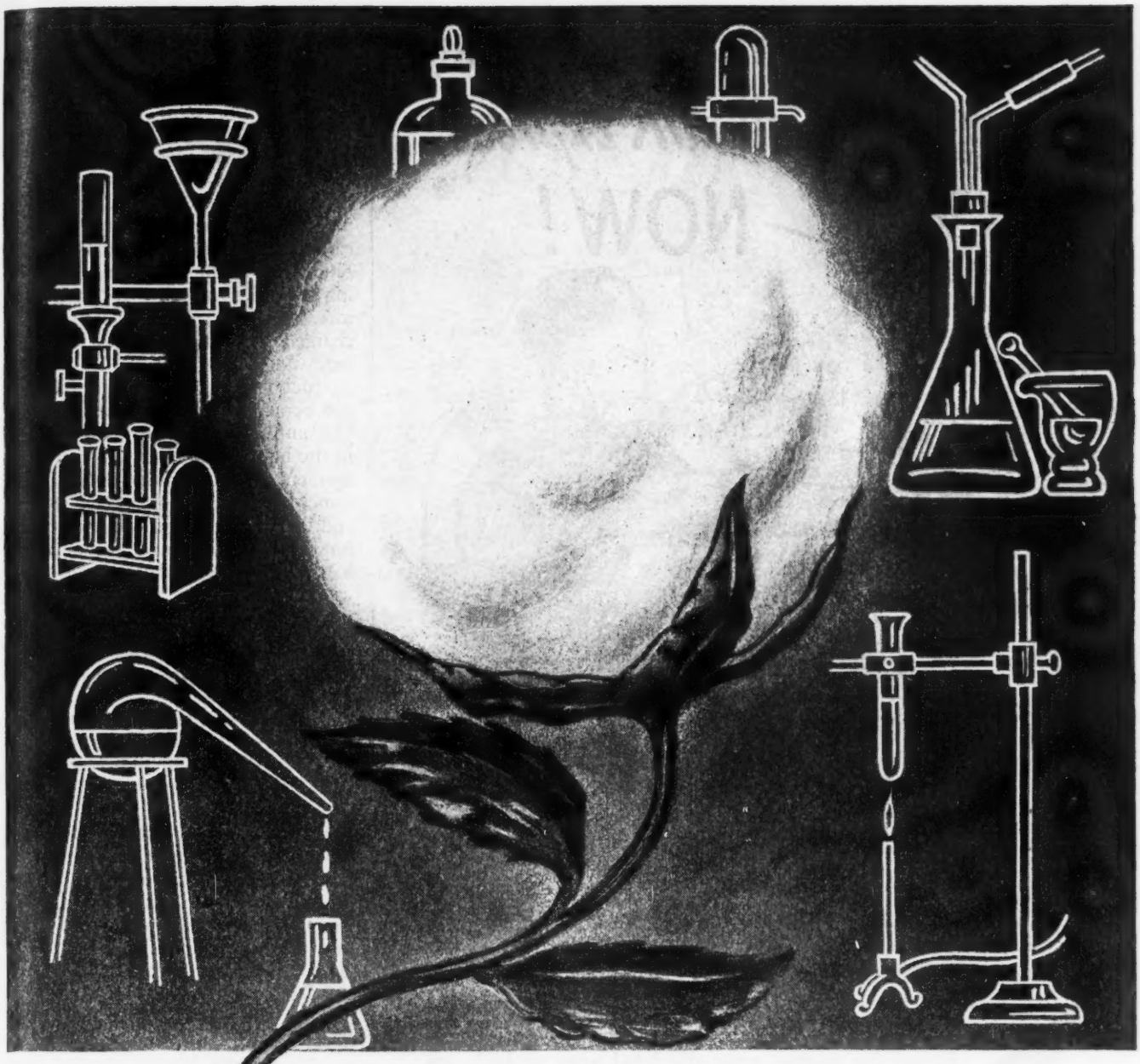
pictures, then there is something in this business of using names for department heads that can produce desirable mental pictures. If the textile industry is advancing mentally as well as physically—and we think it is, both in the technique of handling people and operating plants and processes—then why don't we examine some of the titles used for key men with the idea of telling more exactly their duties and responsibilities and of putting them in the most favorable light with their workers?

Look up the term "overseer" in standard dictionary and while you can find that it calls for a supervisor, an inspector, etc., it also attaches some undesirable associations to the name, such as an "overseer of the poor," "one who superintends laborers or slaves at work," etc. While workers generally think of an overseer as their supervisor, or inspector and trainer, there is always the chance that these workers associate him with some of the undesirable aspects of the title "overseer."

Why not call the textile department head a "supervisor" instead of an "overseer?" From the dictionary a supervisor is "one who supervises; an inspector; superintendent." Here you tell something of a department head's duties and responsibilities without associating him with some of the distasteful and unhappy characteristics of the term "overseer."

Now, if our department managers or heads are called correctly "supervisors," a more healthful mental image can be secured by the worker. He can visualize the name and associate it with the supervision, training, inspection, and council given by more enlightened department heads. This should have a cumulative morale-building effect on the workers. The supervisor is there to direct or supervise, and to help—not to drive, to demand, and to find fault.

In view of discarding the title "overseer" for that of "supervisor," some of the other titles in the mill should probably be changed to agree. Instead of a "second hand" we could adopt "assistant supervisor" or "shift supervisor". This would definitely fix the duties and responsibilities of many key men and add to their prestige. In the case of the term "section hand" we could adopt the term "foreman" which is in reality what many of these men are. There is definitely some confusion here as the "overseer" and "second hand" are often called the foreman and assistant fore-



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. . . The latent possibilities of this fiber, which is as old as man, are being wrested from test tube and microscope.

Look to Aberfoyle to help you meet the post-war period with the latest scientific and technical advances — results of war-experimentation — being made in cotton textiles.

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Durene*
multi-ply mercerized cotton

4 WAYS BETTER
than ordinary cottons

EXTRA COMFORT
---more absorbent
EXTRA STRENGTH
---longer wear
EXTRA QUALITY
---lasting lustre
EXTRA SERVICE
---easy to wash

*Reg. U. S. Pat. Off.

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"I gotta date with 1000 Jeeps! Call AIR Express — NOW!

IF AIR EXPRESS shipments could talk—and knew where they were going and why—we wouldn't have to urge you to *ship when ready*, especially if you are a manufacturer of war materials. For early shipment is the way to be certain of *earliest possible delivery*. Don't let shipments lie around for routine end-of-day pick up. Call AIR EXPRESS the instant the label is on. No matter what the label says, it isn't AIR EXPRESS until it's *on a plane!*

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As a result of increased efficiency developed to meet wartime demands, rates have been reduced. Shippers nationwide are now saving an average of more than 10% on Air Express charges. And Air Express schedules are based on "hours", not days and weeks—with 3-mile-a-minute service direct to hundreds of U. S. cities and scores of foreign countries.

WRITE TODAY for "Vision Unlimited"—an informative booklet that will stimulate the thinking of every executive. Dept. PR-8, Railway Express Agency, 230 Park Avenue, New York 17, N. Y., or ask for it at any local office.

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man, respectively.

As for the term superintendent, this title seems to be generally accepted in its correct sense, as is the term "assistant superintendent" and "technical superintendent." In some plants with unusually large complicated departments, the term superintendent of carding, spinning, or weaving is used. In reality each of these men is an assistant superintendent in charge of carding, spinning or weaving.

Undoubtedly, the textile industry can benefit by examining its title system and fitting the title to the job in the light of advances made in management and foremanship. No doubt some will not like these suggestions and will resist change in this direction but some enlightened organizations have already changed! (*R-63*)

One Fire Per Year From Oil-Soaked Wool

The following information was supplied by W. F. Farley of Associated Factory Mutual Fire Insurance Cos.

"Relative to the hazard of oil soaked wool waste, some 270 Factory Mutual risks in the wool class have reported slightly more than one fire per year since 1928 in wool waste, oily or otherwise, caused by spontaneous ignition. Excluding one large loss which occurred in an unsprinklered wool storage building of wooden construction, the average amount of damage caused by these losses was $480., as compared with an average Factory Mutual fire loss over a ten-year period of about $810. It will thus be apparent that spontaneous heating in oily wool waste has not been a serious factor in Factory Mutual fire losses.

"The possibility of serious loss by fire caused by spontaneous ignition in wool waste, where values are large and protection is inadequate, is well illustrated by a fire which occurred in September, 1941, at a woolen mill in New England. Bagged and sheeted dyed wool had been temporarily stored in an unsprinklered open storehouse of joisted construction, together with a small quantity of card strippings which contained red oil. It is believed that fire originated in these strippings from spontaneous ignition. The building was totally destroyed and contents severely damaged with a loss of $95,970. At another woolen mill, this one in the south, an unsprinklered storage shed used for waste baling and storage was destroyed, contents damaged, and

These Hooker Chemicals are Helping Textile and Dye Chemists

Listed below are some of the Hooker chemicals that are making life a little easier for textile and dye chemists. We have indicated their principal uses in your fields, but many of them have other uses in the textile field as well. All are being produced in commercial quantities and shortages are unlikely in adopting them for your processes.

Product Chemical Formula Molecular weight	*Description*	*Uses*
Aluminum Chloride, Anhydrous $AlCl_3$; 133.3	Gray crystalline solid	Catalyst; Dye making
Antimony Trichloride, Anhydrous $SbCl_3$; 228.1	Yellowish solid	Catalyst; Dye making; Mordant in textile printing; Moisture and fire-proofing textile
Benzoate of Soda C_6H_5COONa; 144.0	White crystalline solid	Dye intermediate
Benzoic Acid C_6H_5COOH; 122.1	White crystalline material	Dye intermediate
Dichlornaphthalene $C_{10}H_6Cl_2$; 197	White crystalline solid	Chemical intermediate
Cyclohexanol (Hexahydro Phenol) $C_6H_{11}OH$; 100.1	Clear, colorless viscous liquid	Solvent
Monochlortoluene $C_6H_4Cl\text{-}CH_3$; 126.5	Clear, colorless liquid	Solvent; Dye intermediate
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid	Solvent; Dye intermediate
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temp. Colorless to light yellow liquid under pressure	Dye intermediate; Chlorinating agent
Sodium Tetrasulfide Na_2S_4; 174.23	Aqueous solution containing 40% by weight of compound. Dark red liquid.	Manufacture of dyes

In addition to the chemicals listed above, Hooker makes many more that are being increasingly used in the textile and dyeing fields. Our technical staff has been helpful in solving problems in these fields with use of Hooker chemicals and is ready to work with you in the application of Hooker chemicals to meet your requirements. A copy of the Hooker General Products List, available on request, will give you an idea of the diversity of Hooker chemicals and their uses.

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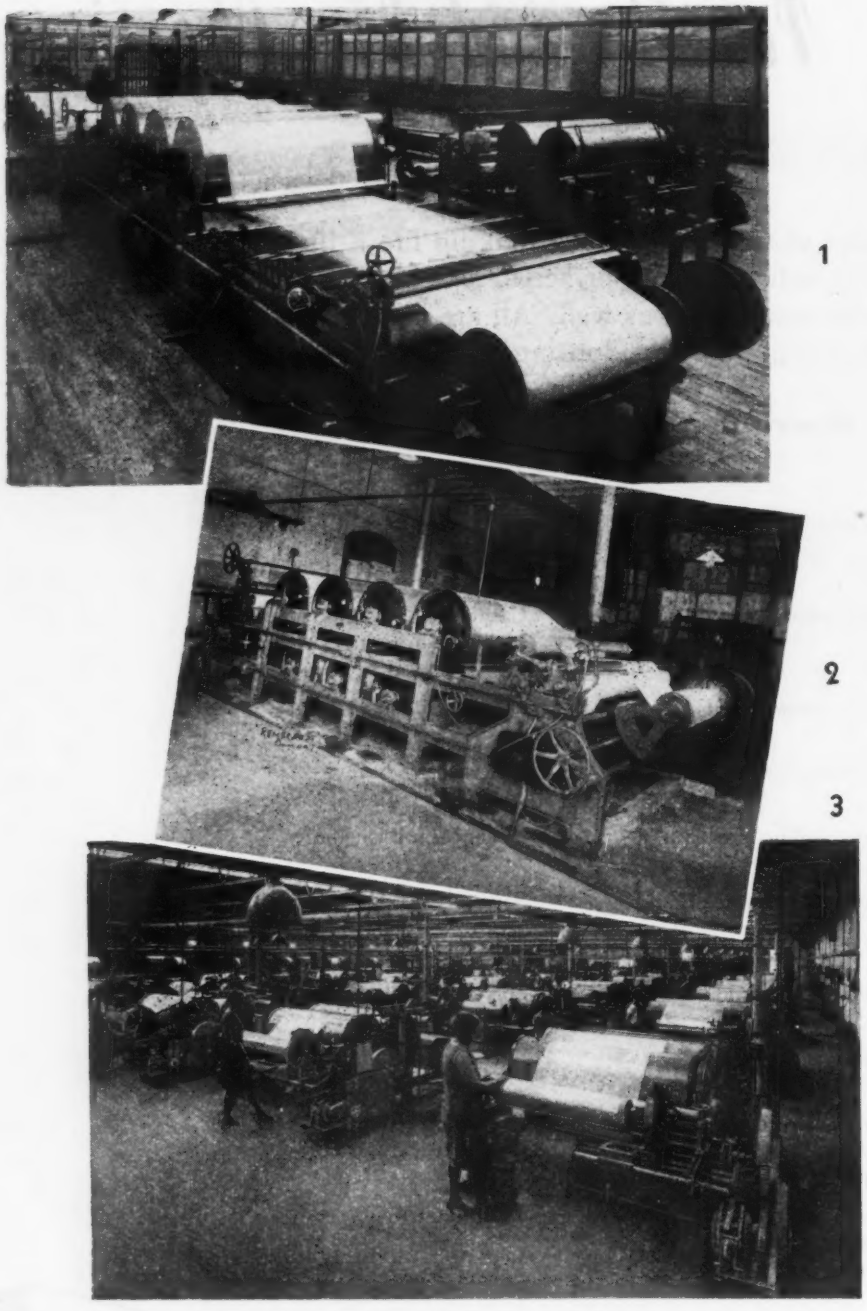
HOOKER CHEMICALS

JOHNSON RAYON WARP SIZERS



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Johnson Rayon Warp Sizers

LEADERS HERE AND IN NINETEEN FOREIGN COUNTRIES

1. *Marcus Hook, Pa., pilot plant of American Viscose Corporation—Latest 7 Cylinder Johnson Sizer. (Top).*
2. *Bombay, India. One of the first 7 Cylinder Machines made by us. (Middle).*
3. *Nuneaton, England, Courtoulds, Ltd. An installation made over 15 years ago. Most of these machines have been replaced with later types. (Bottom).*

Charles B. Johnson MACHINE WORKS

PATERSON **P. O. Box 1507** **NEW JERSEY**

an adjoining building somewhat damaged by fire thought to have been caused by spontaneous ignition in wool waste in which nearly double the amount of wool oil had been used than was normally the case. This loss was $2,370.

"The possibility of fires of this type occurring frequently is illustrated by experience at another New England woolen mill where a series of twelve fires in oily card strippings were reported from 1928 to 1933. Losses were small. Samples of the red oil and also of a mixture of mineral and red oils, which were being used were tested in the Factory Mutual Laboratories and found to have a pronounced spontaneous heating hazard. The plant was advised to change to a safe oil, several of which were suggested.

"As compared with the mentioned small number of fires caused by spontaneous heating in wool waste, risks in the wool class insured in the Factory Mutual Companies have reported an average of 56 fires per year during the last eight years. It is thus apparent that spontaneous heating in wool waste has been a minor source of fire loss at these risks."

The following additional information was supplied by R. G. Shepherd of Associated Factory Mutual Insurance Cos.

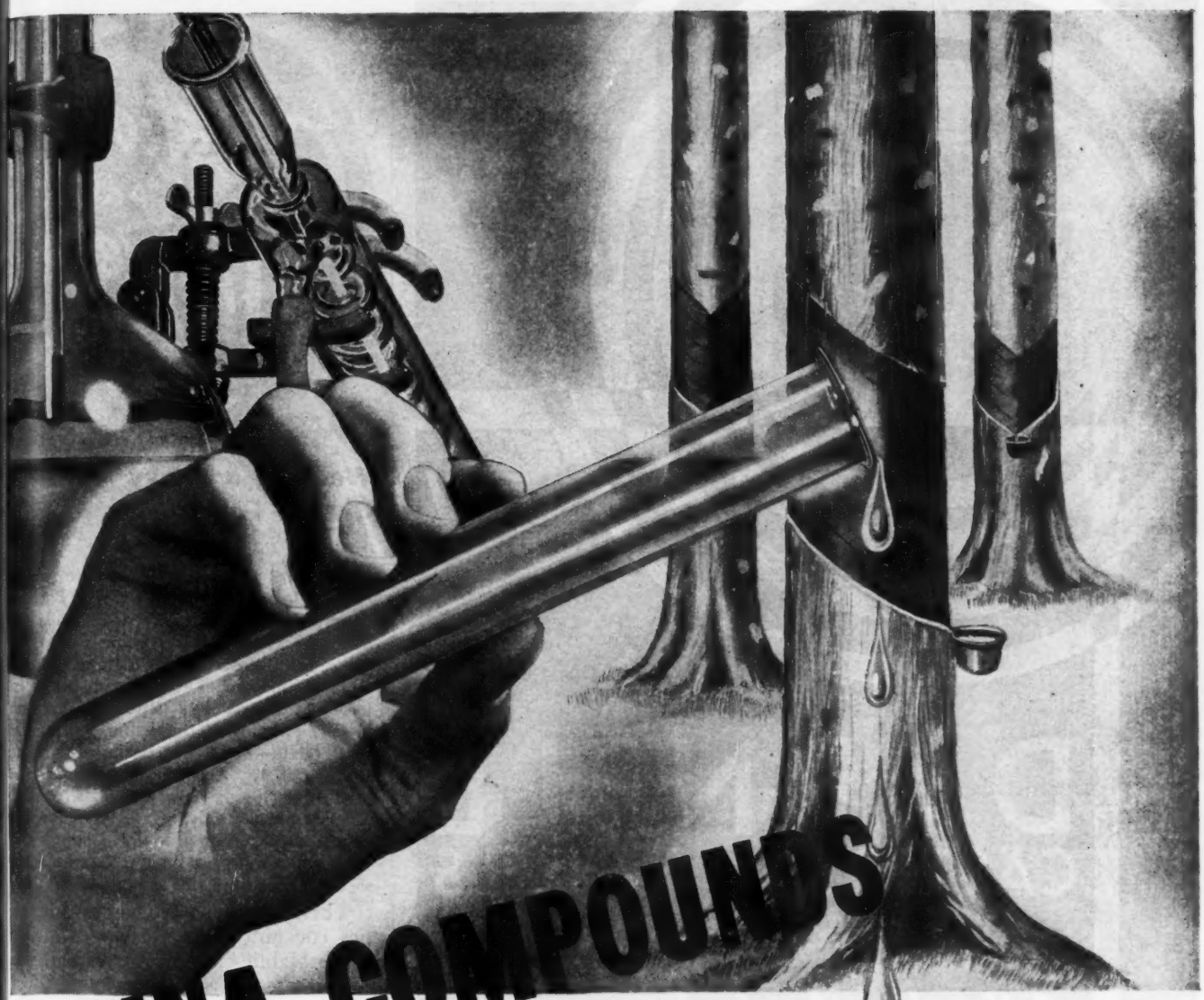
"The use of straight fatty oils, particularly seed oils such as cotton seed, peanut, corn, etc. will invariably cause spontaneous combustion. The same holds true with some grades of elaione or red oils, especially if manufactured from recovered stock, such as garbage grease.

"It is customary for manufacturers of wool waste or shoddy to use batching oils with a high mineral content, which is assurance against spontaneous heating if the saponifiable proportion is made of a well-refined animal fat. Another type of oil that is perfectly safe to use is the so-called sulphonated mineral oils which also have a large percentage of straight mineral stock.

"Clean wool stock is not susceptible to spontaneous heating but there have been cases on record where chemicals such as stripping agents and other metallic salts have been responsible for fires of this type."

Color Test Needed

We were delighted to see the story in TEXTILE WORLD (May, p. 84) on color aptitude testing. A test of this type is just what the textile industry has been needing. (R-79)



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Longtime specialists in the fields of Combining, Coating, and Impregnating Compounds, the UBS Laboratories are ideally set up to develop the particular Buna Compounds your operations require. *Write today, describing your Impregnating, Combining and Coating Problems.*

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Questions and Answers

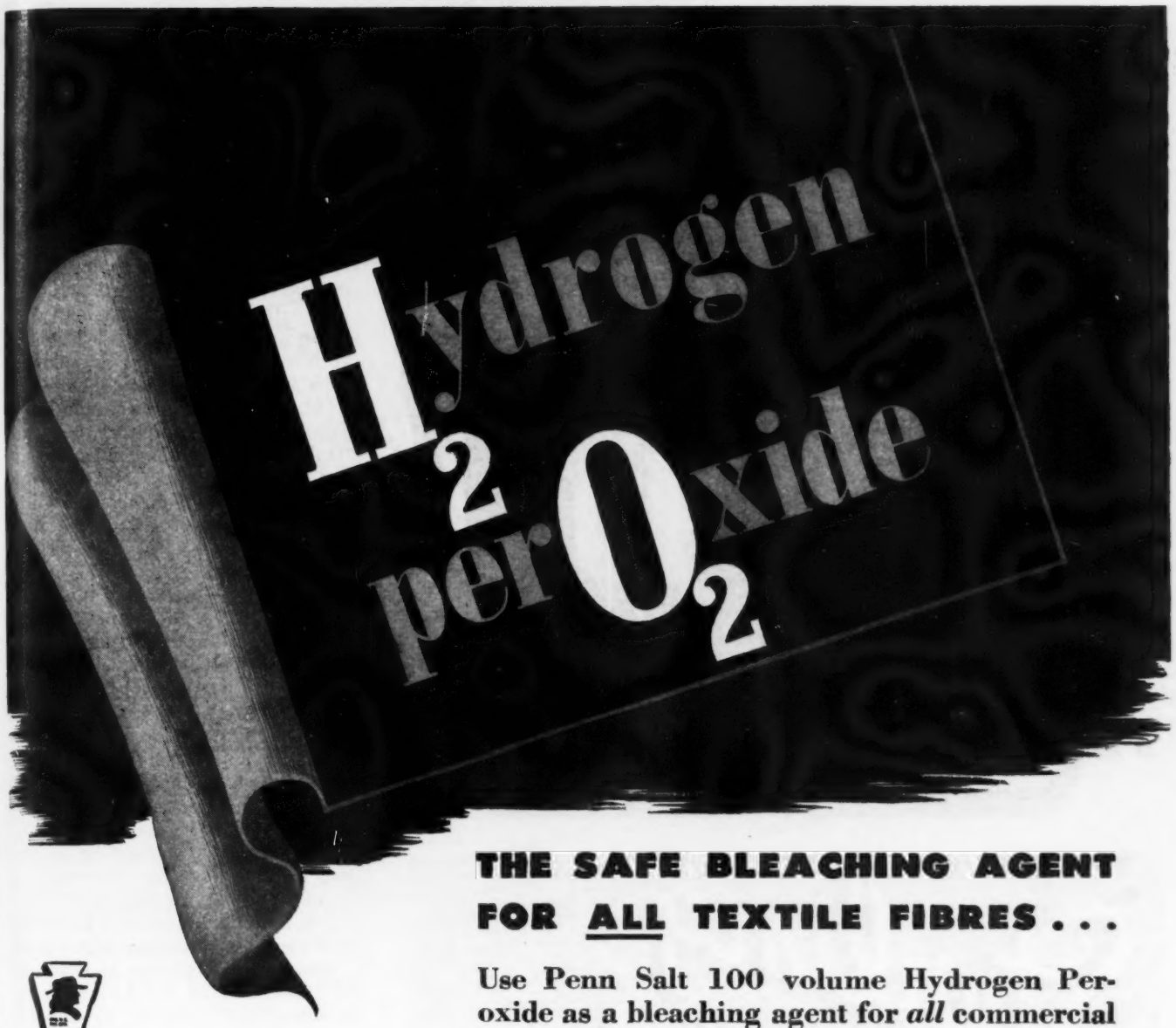
Weaving a Heavy Cotton Fabric

Technical Editor:

We are attempting to weave on a Draper loom, equipped with a Bartlett let-off, a 124 sley fabric reeded 4 ends per dent. Warp is 21s and filling is 24s, 56 picks being inserted. A sample of the fabric is enclosed. The whip-roll has been locked to prevent a strong heating-up process. Strain on the let-off is so great that teeth have been stripped. Some looms fail to keep the shuttle in the shed while others have a slack shed and yarns weave unevenly, regardless of tension on the warp. Is it possible to adjust the whip-roll, drop-wire box, harnesses, etc., so as to overcome this condition? (9001)

The inquiry in reference to difficulties encountered in weaving a heavy cotton fabric, sample of which was submitted, on a Draper loom, does not give much important data upon which to base definite recommendations. If the inquirer had stated the width of the cloth and the model of the Draper looms he uses it would have been much easier to give definite settings and adjustments of the loom to facilitate the weaving of this fabric. For instance, if the fabric is narrow, say 36 in. or less, E and K models would handle it with certain modification; if 48 in. or wider M, D, and F models would be required, and if 66 in. or wider it would require L or XP model Draper looms. All these have proper equipment for heavy cloth.

The strain on the let-off motion can be greatly reduced by using drag-bars in addition to the locked whip-roll. Incidently, the writer does not know what the inquirer means by, "to prevent a strong heating-up process." The drag bars are two stationary rolls or steel tubings, placed in such a position that the warp travels over as much of their surfaces as is possible. Such arrangement of drag-bars are shown on page 162 of the "Cotton Loomfixers' Manual." This arrangement of the drag-bars give the warp an acute angle over the whip roll and the spring ten-



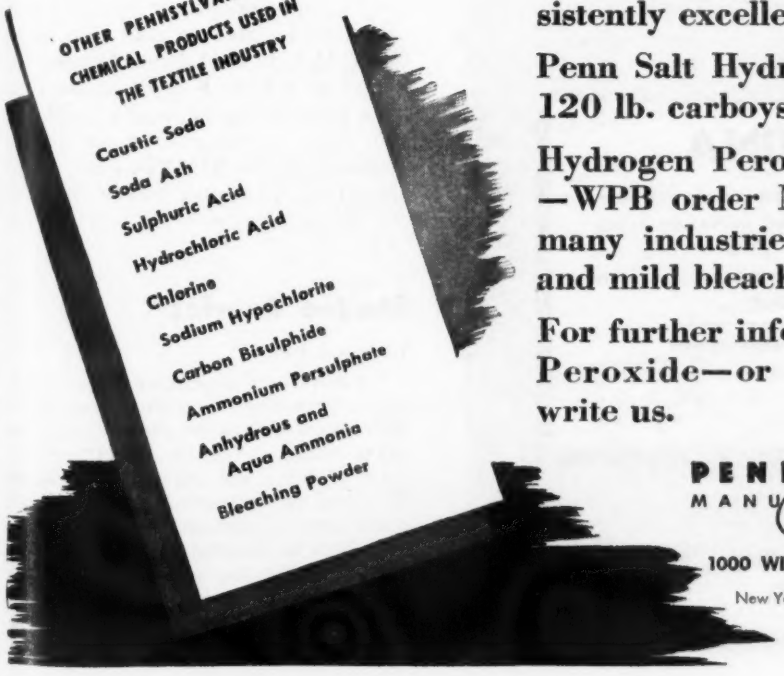
THE SAFE BLEACHING AGENT FOR ALL TEXTILE FIBRES . . .

Use Penn Salt 100 volume Hydrogen Peroxide as a bleaching agent for *all* commercial textile fabrics. It's safe, economical, reliable. Its uniform oxidizing action assures consistently excellent results.

Penn Salt Hydrogen Peroxide is supplied in 120 lb. carboys and 265 lb. drums.

Hydrogen Peroxide is now under allocation —WPB order M300, schedule 5. However, many industries are investigating this pure and mild bleaching agent for postwar uses.

For further information regarding Hydrogen Peroxide—or any Penn Salt Product—write us.



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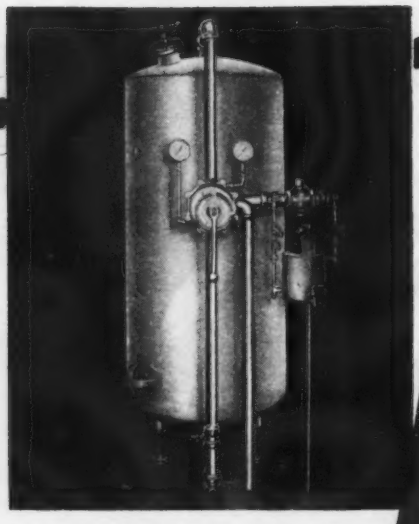
Scratched Rollers! Clogged Conductors!

Work Stoppers Stopped With Refinite Conditioned Water



Small Refinite Rapid Pressure Filter

Turbidity (suspended matter in water), often results in mud stains on cloth, scratched rollers, clogged conductors, etc. Turbid water also carries with it the chemicals which cause hardness and acidity. The troubles which turbidity can cause are numerous . . . and expensive! It is far cheaper to remove the cause than to pay for the damages. Refinite Water Conditioning equipment is specially designed to meet YOUR specific needs. Write Refinite today!

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Sterling Ring Travelers

STAMINA

Sterling Travelers have the stamina to stand the long wear that is so necessary today, when the mills are so short of help and cannot take the time to change travelers Why not ask for samples?

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FALL RIVER, MASS.

sion on the let-off motion can be greatly reduced. Also the frictional resistance of the warp on the drag-bars can be deducted from the strain on the let-off motion. A single drag-bar may also be used, but is not as efficient. Another arrangement to reduce the strain on the let-off motion, providing that the loom beams are equipped with gear-friction heads, is to use a friction chain with levers on one or both sides of the loom. This will take some of the heavy load, required to hold the beam, from the automatic let-off.

The warp stop motion should be set high to form a high warp line, but guard against over doing it as the top shed will be too slack. Set the whip-roll so that, when depressed by the proper warp tension, it will be from ⅛-in. to ¼-in. above the banks of the warp stop motion.

To facilitate the beating up of the heavy pickage set the harness motion early, that is, time it so that the harnesses are even at bottom center of the crankshaft, or very little beyond. This will beat up the filling behind a crossed shed, with the top shed already begun to slacken up by the height of the warp stop motion. The harness motion should be under-cams with top-roll motion.

The friction drive must be in very good condition so that no power on the loom is lost by a slipping friction. Adjust the friction so that when the handle is in "on" position, with a block of wood placed between the lay and the front horn of the loomside, the pressure is just sufficient to stop the motor. Excessive pressure is just as detrimental to a good running loom as insufficient pressure.

The entire loom must be in A-1 condition to be able to take this heavy fabric. A light duck loom, Draper XU model or a C & K light or medium duck loom would be more suitable for this type of fabric, but by proper modification the XD, XP or XL model Draper should handle this fabric without too much trouble.

Shaded Fabrics

Technical Editor:

We have been experiencing some trouble in the dyeing of certain fabrics which our customers claim are shaded from center to selvage. We are submitting two pieces of fabric and one skirt, and would like to call your attention to sample No. 1 which shows a definite shading in one-half which we contend the shading is due to a change in the weaving. On sample No. 2, you will observe markings, which, when placed from selvage to center, show a distinct shading. In the skirt, you will

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SUPERIOR SYNTHETIC DETERGENT

A highly efficient product for use in scouring and boiling off all textile fibres. Active in hard or soft water it may be used alone in the bath or in conjunction with soaps or alkalies with amazing results.

- Let LANITOL increase the detergent action of your soap and achieve cleaner stock, yarn or cloth through its rapid and complete rinsing properties.
- Let LANITOL improve the boiling off, processing and dyeing of rayon hose in one or two bath methods. A better finish and uniform shade is easily accomplished.
- Let LANITOL prove its value for washing off worsted tops and yarn to remove all oil and grease.
- Let LANITOL demonstrate its ability to thoroughly scour rayon and woolen cloth and effectively remove all residual soap, dirt, etc. in the rinse, leaving the cloth with a pleasing hand and free from objectionable odors.
- Let LANITOL raise the efficiency of your fulling operation—a small addition to the soap liquor increases its penetration and activity when applied to the cloth in the mill and accelerates the fulling action.

Sample or demonstration furnished on request.

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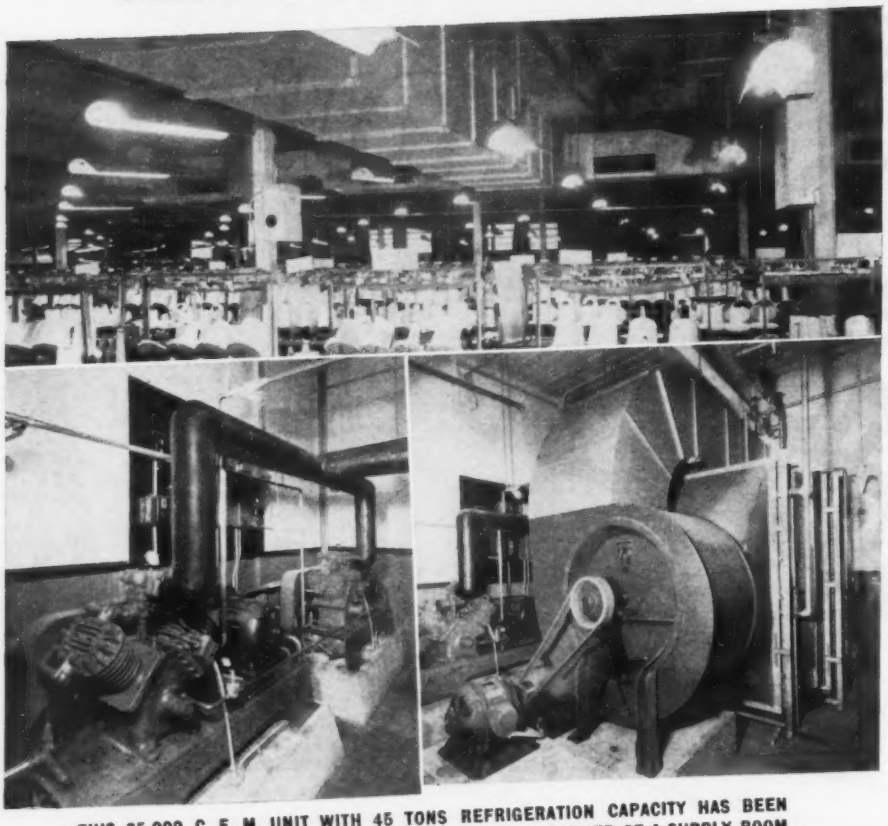
Manufacturers of Industrial Chemicals for over 40 Years

YEAR 'ROUND TEMPERATURE CONTROL



THIS 35,000 C. F. M. UNIT WITH 45 TONS REFRIGERATION CAPACITY HAS BEEN NEATLY ENGINEERED FOR INSTALLATION IN A 12'x 12' CORNER OF A SUPPLY ROOM

Bahnson experience, equipment, and engineering solved a difficult situation in this Rayon weaving mill where outside humidity was a problem, and space, ceiling clearances, and obstructions presented more than an average problem.

Dehumidifying by refrigeration with year around temperature control was the solution worked out for this difficult situation. . . Bahnson experience and equipment, plus engineering skill in meeting varying conditions throughout the textile industry, resulted here in a thoroughly practical, compact and efficient installation.

Bahnson equipment, in the hands of experienced air conditioning engineers, is now ready to bring postwar solution to any air conditioning problem—whether it concerns worker comfort, operating efficiency or both.

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QUESTIONS AND ANSWERS

observe there is a distinct change in color in one of the panels and also a shading in other panels which we also contend is not a dyeing problem. The skirt was made from one piece, and there is no question of two dye lots having been used in the same garment.

You will note that this fabric is made from a blend of acetate and viscose and our contention is than an unevenness in the blend produced a difference in the spun yarn which is accountable for the change in the finished fabric. However, we would appreciate your making a close examination of the defects shown in the samples submitted and advising us what in your opinion is the cause of the defects and what steps should be taken to remedy same. (8992)

Sample No. 1 does show a definite shading occurring in the filling and should be called to the mill's attention. This undoubtedly has been caused by a filling change.

Sample No. 2 does show, as the inquirer states, a definite shading from selvage to center. However, with the two selvages matching up with each other, it would be difficult to say whether this shading was caused in the gray mill or finishing plant. As for the skirt, several panels do show a side-to-side shading, and there is also shading from panel-to-panel. It is not possible from the examination of the skirt to determine which panels were made from those portions of the cloth near the selvage and those near the center of the piece. All samples appear to be made of a 2-ply spun-viscose and acetate blended warp and a singles acetate filling.

Our examination indicates that the blending is uniformly done, but even if it were not, it would be difficult for a gray mill to so weave a cloth as to produce a gradual shading from selvage to center. Uneven blending would be more apt to show up in a general blotchy or streaky condition.

Two conditions could contribute to this shading, the first of which is tension. It is possible for the gray mill to apply uneven tension to the warp in the weaving operation so that more of one fiber or the other would show when the fabric was dyed. Also the finisher may so apply tension, particularly in the tentering operation, as to open up the cloth near the selvage, creating a nonuniform appearance from selvage to center.

The finishing and drying operations are a second potential cause of shading. If heat is not uniformly applied from selvage to center, there is danger of color migration. Again, in the application of resins for shrink-setting and crush-proofing, if the pad rolls are not true, there may be a mashing down

★ ★ ★ ★ ★

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"Doctor-book" treatment is of dangerously doubtful value when an undiagnosed condition exists, or is suspected to exist! The experienced collaboration of physician and pharmacist is not only indicated but required.

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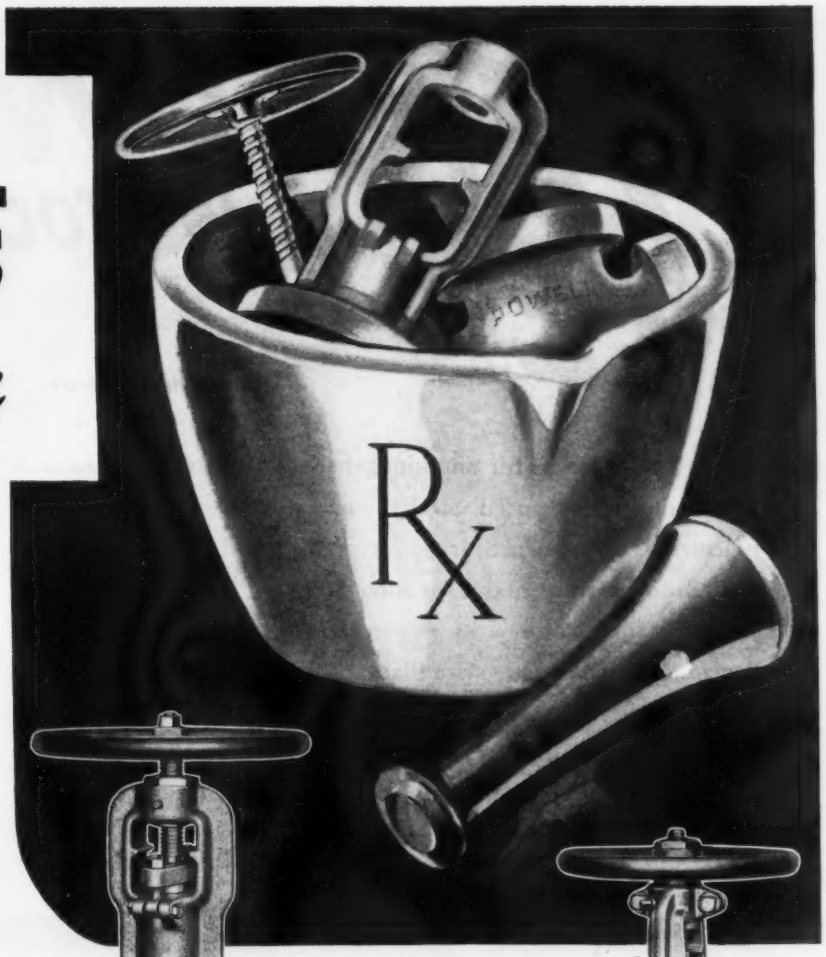

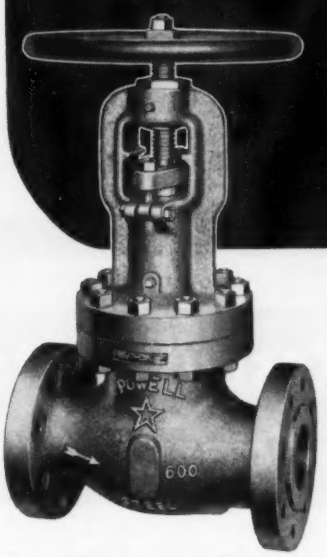

Fig. 6031—Class 600-pound Cast Steel Globe Valve. Has flanged ends, outside screw rising stem and bolted flanged yoke. Sizes ½" to 12", inclusive.

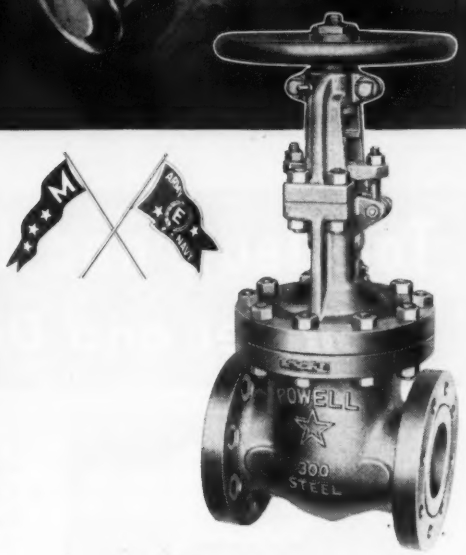

Fig. 3003—Class 300-pound Cast Steel Gate Valve, with flanged ends, outside screw rising stem, bolted flanged bonnet, two-piece yoke and taper wedge solid disc.

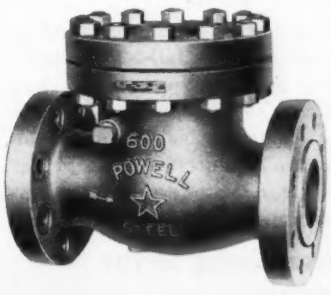

Fig. 6061—Class 600-pound Cast Steel Swing Check Valve. Has flanged ends and bolted flanged cap, held securely by an ample number of bolts. Renewable disc is hung on 5° angle and when wide open permits a full, straightway, unobstructed flow through valve body. Sizes 1¼" to 12".

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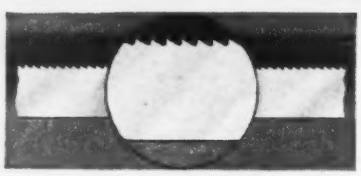
To Clean and Reseat Slots *in Sinker and Divider Heads*



Thomas & Skinner Slot Cutter

No need to send sinker and divider heads back to factory when you have Thomas & Skinner Slot Cutters. This simple and valuable tool enables you to clean out and reseat slots right *in your own mill.* And you can keep a machine in operation—with only the head you are working on out of production for a few hours.

Thomas & Skinner Slot Cutters are made from high grade tool steel, tempered and ground to exact gauge of the sinker. Comes in a leather carrying case. Every fixer should carry one. It is necessary to send sample sinker when ordering slot cutter.

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Other quality products which we manufacture for full-fashioned hosiery mills include Jacks, Jack Axles, Course Markers, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines.

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We restore worn cams, gears, rollers, and many other textile machine parts to their original size and shape. Satisfaction guaranteed.

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and flattening of the selvages which can easily produce a shaded condition.

The inquirer may check on the gray mill in several ways, as to uniformity of blend. We suggest taking a number of full-width samples from different pieces, sewing them together and running them through some direct color in the open width on a pad whose set is known to be uniform, after which the samples should be dried with uniform heat across the piece. If the gray mill is at fault, and precautions are observed on the application of the direct color and the drying, selvage-to-center taper should show up.

Another test would be to take samples from near the selvage and from the center of several different pieces which show this shaded condition, weigh them bone-dry and then dissolve out the acetate fibers in a solution of acetone. Dry the remaining viscose fibers and weigh. If the blending is uneven, a difference in the ratio of viscose to acetate will be observed.

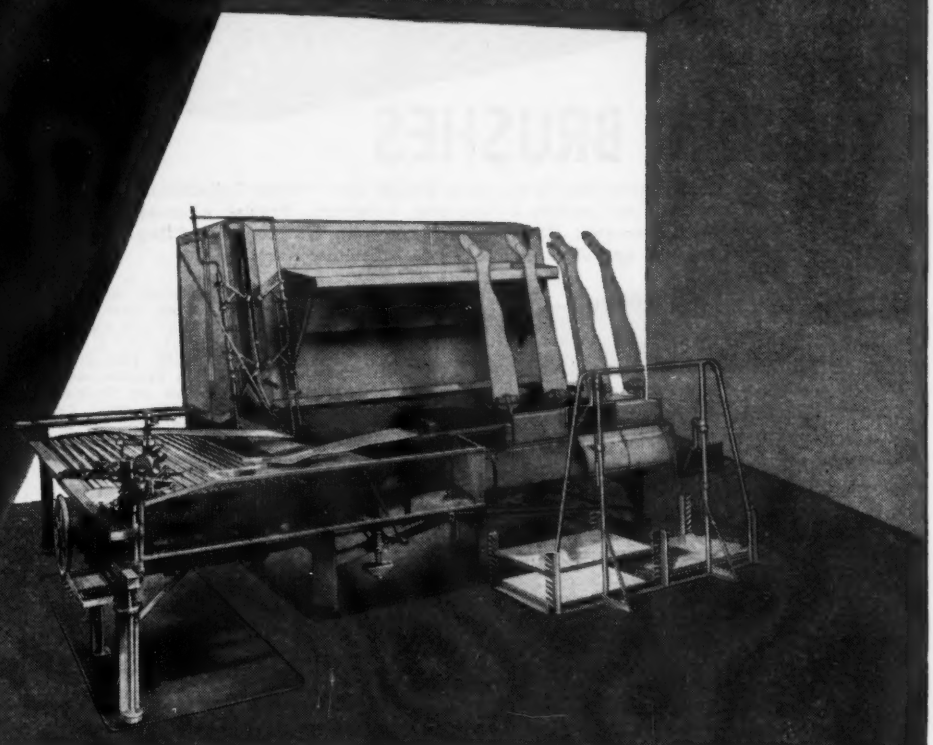
Neps in Worsted Yarn

Technical Editor:

We have some difficulty in trying to eliminate a defect in our gilling operation, which seems to defy all attempts at correction. The imperfection is apparent as small clusters of fibers which show up when the sliver is spread for examination. As we describe it, the sliver is not "clear" when all fibers are laid parallel, but has a tendency toward being "neppy." The two machines in question which produce the defect perform the first gilling after recombing. We are certain that the defect is not produced in the combing operation since we have searched extensively for evidence of it in the combed sliver and have been unable to find a single instance. Moreover, if the combed sliver is gilled through any of our other gill boxes, there is no trace of imperfection. This definitely places the fault with two identical machines, both of which produce the defect. They are Societe Alsacienne Intersecting boxes running normally with a front draft ratio of 5 to 1 on 64s quality wools. The machines are equipped with 22 fallers in the bottom set, 10 fallers in the top set, single row pinning, screw pitch ⅜-in. We have checked the machines for condition of faller pins, experimented with front and back draft ratios, varied the weight of stock load, changed the level of rolls and fallers in relation to each other, checked apron condition, all without any effect whatever. Can you suggest any possible cause for the imperfection, or any other measure which might be likely to eliminate it? (8996)

It is difficult to visualize the inquirers trouble, especially as he does not state what type of box gives him a good sliver on his first gilling after re-

Preview of our Postwar Boarding Equipment



(DOESN'T IT LOOK SURPRISINGLY LIKE OUR PRE-WAR EQUIPMENT?) . . .

The truth of the matter is that our postwar boarding equipment will look very much the same as our pre-war machine. At the time we ceased our peacetime production Proctor boarding equipment already represented the latest developments in that type of machinery. Certain very valuable auxiliary equipment developed just prior to the war will be available on the first machines manufactured after restrictions are lifted. However, our equipment will not be revolutionary in design. Here's one thing we can promise you about the boarding equipment we will build tomorrow . . . the same down-to-earth engineering which established Proctor boarding equipment so firmly in the mills of leading hosiery manufacturers before the war is going into each machine produced after the war. From the standpoint of economical operation, quality of the finished hosiery and production capacity—we have every reason to believe Proctor Boarding Machines will continue to assure you the greatest return per dollar invested. In fact, a number of manufacturers have already placed orders for Proctor Boarding Machines to insure early deliveries. You can save yourself what may prove to be a costly time-out period when the conversion comes by giving careful consideration to your postwar needs—now!

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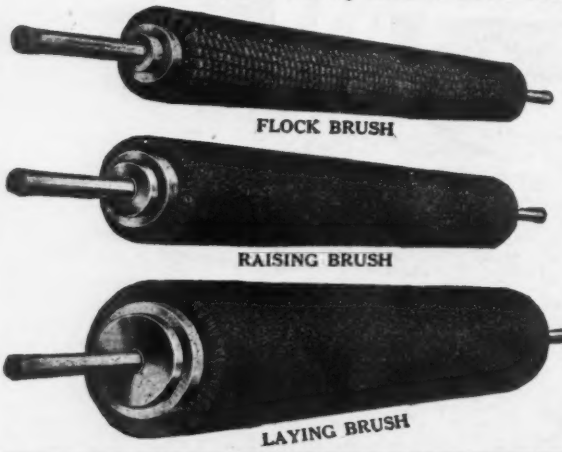
METAL CORE FURNISHER BRUSH
has Nylon Bristles. Has 1/5 absorption of dyes and inks. Far longer life than other fibres. Easily cleaned. *Can be used for more than one color.*

COLD DRAWN STEEL OR ALUMINUM CORE

CYLINDER BRUSHES

● Experienced textile mill men KNOW the Jenkins Cylindrically Wound Metal Core insures satisfaction, economy. Precise alignment. Maintained strength. No crack, warp or split. No bristle shedding. Jenkins Brushes entirely machine made, absolutely uniform.



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Jenkins Brushes are RE-FILLABLE. Worn bristles renewable. Metal core can be rewound, brush made EQUAL TO NEW. This great economy often decides mills to "standardize on Jenkins Brushes". We will be pleased to give you worthwhile advice, based on our long experience, regarding their use on your machines.

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Manufacturers of textile brushes of every description
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MARITIME "M" MERIT AWARD

Tank Builders for over 80 Years

R. D. COLE MFG. CO.
Established 1854
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combing. However, the following suggestions may be helpful.

1. Run the intersecting gill boxes with no back draft. Permit the stock to float in, so to speak.

2. Be certain that the pins are not too long as they might bottom on the opposite bar.

3. Pinning might be too fine.

4. Don't overload the box. Too much sliver being fed-in causes excessive friction and consequent strain on the fibers.

5. Calender rolls must be in good condition and stock must not be pulled too tight between the front roll and calender rolls. Sometimes when stock is too tight it slips on the calender rolls and roughs up the fibers.

Knitter's Damp Box

Technical Editor:

In the "Kinks and Short Cuts" section of the May issue, reference is made to a knitter's damp box in the article entitled, "Treatment Improves Lace Hosiery Blanks."

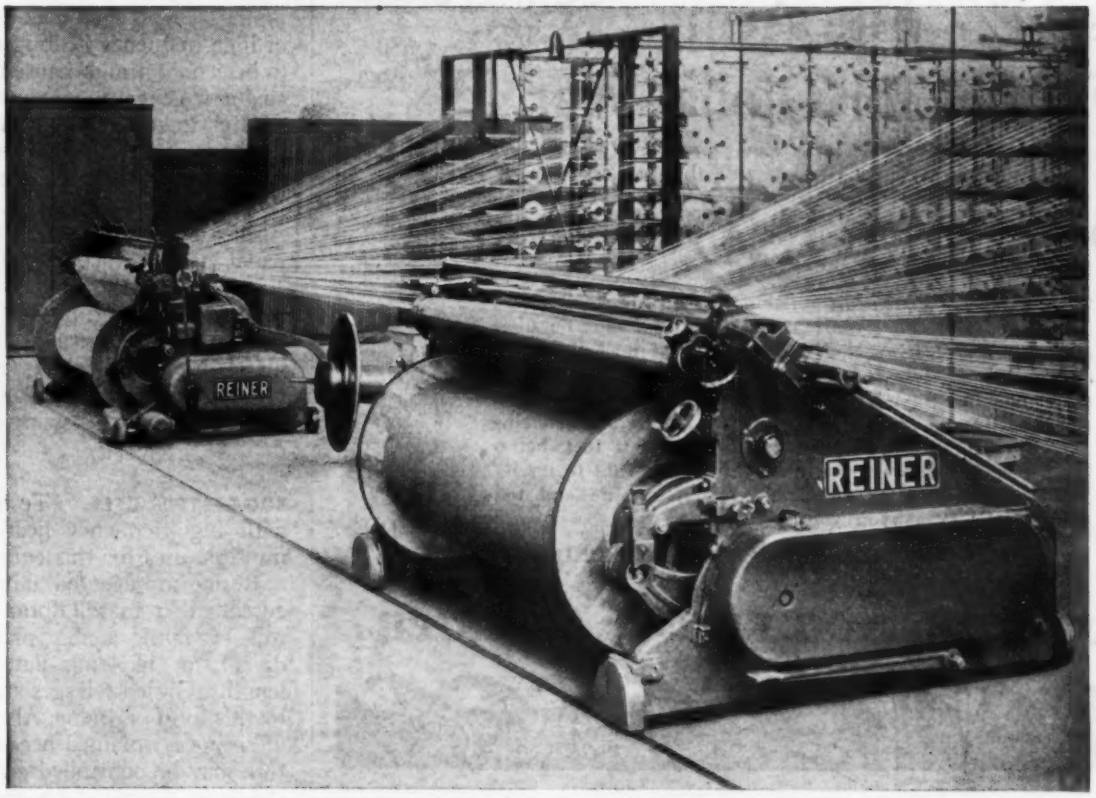
Inasmuch as we handle mainly all-wool worsted yarns and have no humidification system, we have the problem of preventing our yarns from becoming dried out during the hot summer months. We would appreciate a more detailed description of a damp box and any suggestion which you may offer. (8993)

One type of knitter's damp box used on the floor is an inclosed metal box having three shelves and capable of holding about 75 cones of yarn. The box has hinged doors to permit putting in and taking out of material whenever necessary and on the bottom of the box (nearly equal to its base area) is a tray about 2 in. deep containing water. With the gradual evaporation of the water a box of this type will produce about 70% relative humidity. Yarns left in the box will adjust their moisture content to this condition.

A somewhat similar type of box is used on knitting machines with the exception that the boxes have windows to allow the knitters to see the yarns. These boxes are, of course, much smaller than the floor-type since they are mounted on the machines.

Within the last few years, a big improvement has been made in the damp boxes mounted on the machines. These newer types consist of a humidifier unit controlled by a humidistat which delivers vaporized moisture through distributing ducts to the yarn boxes on the machine. This results in a more constant and more uniform humidity within the boxes.

"The Most Advanced"—



REINER *High Speed Warper*

40 Years Background

Mill executives using the REINER High Speed Warper assure us that it is *the most advanced design* available today—for beaming filament rayon, spun rayon, cotton, wool, worsted, linen and other fabrics.

With a constant speed drive it affords a stepless range from 50 to 1000 yds. a minute.

Back of this advanced equipment stands over 40-years service in supplying the Textile Industry with knitting machinery and embroidery machinery. Throughout the War period we have continued to supply parts for maintenance of REINER Textile Machinery.

Textile men who are concerned about their Post-war production will be interested to learn the full advantages of the REINER Line.

Write for complete information.

MANUFACTURERS OF

The Reiner line of textile equipment. For 40 Years it has represented the highest standards of quality and performance.

- **Full Fashioned Hosiery Machines**
- **Auto Heelers**
- **Tricot Machines**
- **High Speed Warping Machines** (Full Width and Sectional)
- **Magazine Creels**
- **Jack Creels**
- **Thread Tensions** (Counterbalanced & Disc)
- **Kay Loom Machines**
- **Raschel Machines**
- **Automatic Embroidery Machines**
- **Automatic Bobbin-Winding Machines**

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REINER
INCORPORATED
WEEHAWKEN, NEW JERSEY

Ten minutes from Times Square or Penn. Bus Station, via Lincoln Tunnel.

Telephones:
Union 7-0502—7-0503—7-0504—7-0505

Fits Army
Fabrics for Global War...

Fabrics that must meet the rigors of today's world-wide war, need every good characteristic that you can impart.

DRUMMOND SOAP

Gives fabrics a good start on their career for Army, Navy or civilian use. For DRUMMOND Soap contains no filler of any kind . . . It's a high-body product of low alkali content . . . It has a high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working sample and test DRUMMOND Soap on your own goods.

Don't Sell America Short — BUY MORE BONDS

Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

ANDREW K. HENRY

★

RAYON TOPMAKER
VISCOSE
ACETATE
RAYON NOILS

★

158 SUMMER STREET
BOSTON 10, MASS.

High Frequency Drying

(*Continued from page 97*)

piping. Under such conditions the use of high-frequency heating might prove to be economical, because it eliminates auxiliary generating equipment.

High-frequency units are space-saving. Normally, a complete unit not over 30 ft. in length will replace a steam dryer installation 100 ft. in length. Also, a small, simple, remote control panel provides accurate and efficient control over the drying or heating process. The turning of a dial will change the temperature of the material being dried, and when set, the same temperature will be had in all units of the same material passing through the dryer.

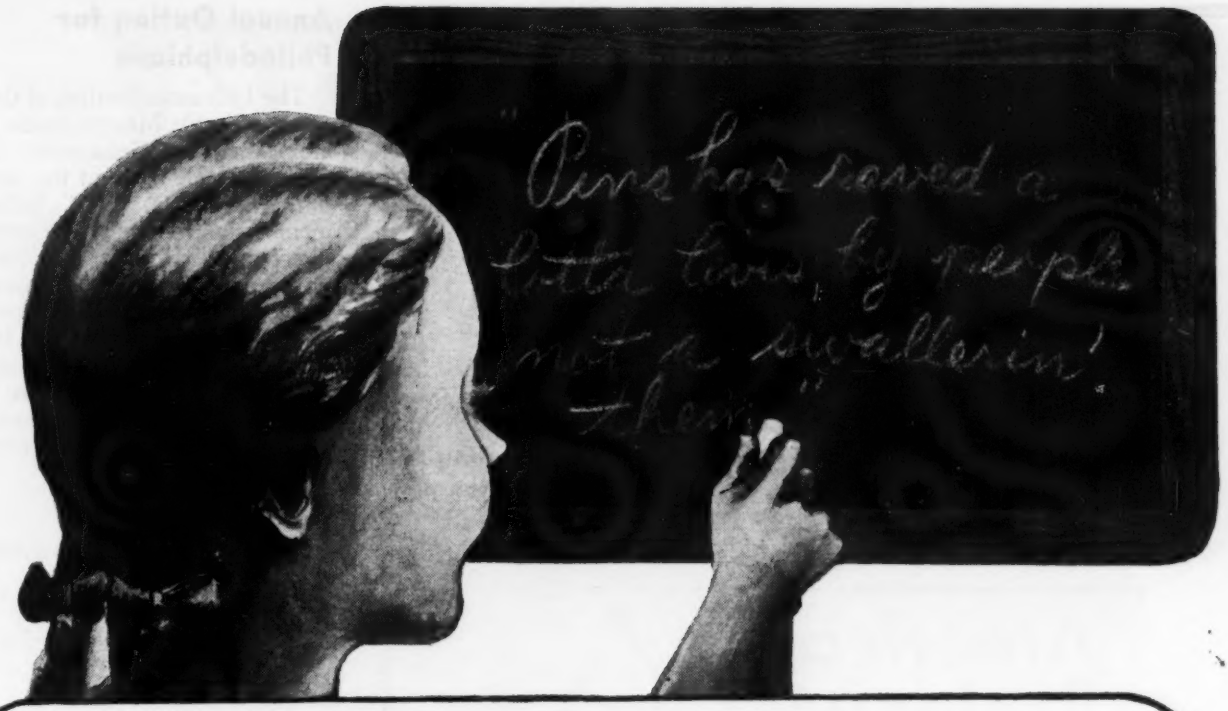
SUGGESTED USES. Tests conducted with high-frequency heating indicate multiple uses for this equipment.

Resin impregnated fabrics may be cured either in roll form (the entire roll of fabric being placed in the dryer), or in long, flat, continuous lengths. Curled selvages are eliminated by this form of drying. Also uniformity of curing is obtained because temperature may be controlled accurately and the resin deposited on the innermost section of the fabric structure receives the same degree of heat as that on the outside. Laminated fabrics may likewise be cured in roll form, the same advantages being derived as obtained in curing impregnated fabrics.

Successful setting of twist in rayon and in nylon, handling yarn on cones as large as 18 lb., is being done commercially by this apparatus. Greater uniformity in twist is obtained and extensive time-savings made. Twist may also be set in smaller-sized packages of rayon and nylon intended for the hosiery trade and for use in crepe fabrics.

Rayon cakes may be dryed with high-frequency equipment. Cake drying can be handled in throwing mills after tinting or other processing operations where it is advisable to handle the yarn in cake form. This type of drying will permit dyeing of rayon in cake form as the cakes may be dried either in a vacuum or at atmospheric pressure. Handling rayon in cake form eliminates skeining and other handling operations.

The application of high-frequency drying to the slashing operations holds possibilities. Also, other suggested uses include the drying of heavy papermakers felts, heavy carpets, and other textile fabrics of great bulk, either in roll or in sheet form.



HOW **UNBRAKO** SELF-LOCKING HOLLOW SET SCREWS

HELP TO AVOID SHUTDOWNS

A little girl, told by her teacher to write a sentence on "PINS," scrawled: "Pins has saved a lotta lives by people not a'swallerin' them."

If she were writing about "UNBRAKO" Self-Locking Hollow Set Screws, she might say: 'UNBRAKO' Self-Lockin' Holler Set Screws has saved a lotta textile mills from shut-downs by their notta unwindin'."

And that amusing, childish statement would truly suggest the vital importance of a set screw that really stays set.

"UNBRAKO" SELF-LOCKING, HOLLOW SET SCREWS

stick to their jobs for the very sound, mechanical reason that their *knurled* points dig in and hold the "UNBRAKO" immovable against the most violent vibration. They accomplish their purpose by "notta doin'" something—by NOT unwinding.

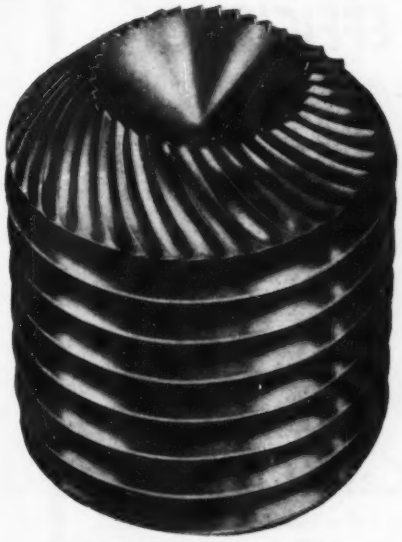
That's a negative way of expressing a very significant fact in regard to looms and textile machinery of all kinds.

If you are not using "UNBRAKO" Self-Locking, Hollow Set Screws with the knurled point, investigate their unfailing "stick-to-itiveness."

Look *backward*—to your experience with breakdowns from loosening set screws.

Look *forward*—to ease of mind and more steady production by removing one cause of breakdowns.

"UNBRAKO" Welt-Bar Socket Screws have demonstrated their worth by consistently superior service. But don't take our word for it—ask for samples.



"UNBRAKO" Self-Locking Hollow Set Screw with the knurled point that *digs in* and holds without fail, despite the most violent vibration. Pat'd. & Pats. Pend. Sizes No. 4 to 1½" in diameter.

Knurling of Socket Screws Originated With "UNBRAKO" Years Ago.

Send for "UNBRAKO" CATALOG and samples of "UNBRAKO" Screw Products.

OVER 40 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 571. BRANCHES: BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

• Filling
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• Gasproofing
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• Waterproofing
• Greaseproofing
• Wrinkleproofing
• Permanent Sizing
• Moth and Mildewproofing
• Combining and Laminating
• Improved Tear Resistance

IS YOUR PROBLEM HERE?

ARCC Resins to the Rescue

For the Solution of Textile-treating Problems, write

Division of Textile Chemicals

American Resinous Chemicals Corp.

HOME OFFICES AND LABORATORIES: PEABODY, MASS.
NEWARK, N. J. CHICAGO, ILL. MONROVIA, CALIF.

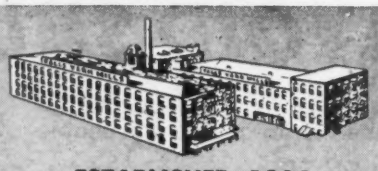
FOR FULL EFFICIENCY

To develop the full efficiency of cards, equip them with BOOTH Card Clothing. There is a complete line; Cylinder Clothing, Doffers, Workers, Strippers, Angle Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

BOOTH QUALITY Card Clothing

Has a firm foundation of fabric or leather, yet is flexible, which reduces the possibility of shelling out. All clothing is available with rehardened points if desired.

Benjamin Booth Co.
Allegheny Ave. & Janney St.
PHILADELPHIA 34, PA.



ESTABLISHED 1904

Falls MEANS THE BEST IN YARNS

MANUFACTURERS OF FINE WOOLEN & SPECIALTY YARNS

Falls Yarn Mills
WOONSOCKET RHODE ISLAND

SELL DIRECT
STANLEY PORTER
NEW YORK
257 4th Ave.

Annual Outing for Philadelphians

The 18th annual outing of the Philadelphia Textile Manufacturers' Association, held at Cedarbrook Country Club, July 21, featured the new army film "Cotton at War" before 325 members and guests. The outing was directed by Herbert W. Anderson, president, Fidelity Machine Co.; Horace T. Greenwood, Jr., president, Globe Dye Works; and W. Brelsford Killhour, president, Quaker City Paper Co. Dr. G. S. Everts spoke on the value of medical service in small mills and on establishment of central dispensaries.

Ethyl Cellulose Available

Ethyl cellulose can now be allocated in limited quantities for use with alkyd resins, under conservation order M-139, says the Chemicals Bureau of WPB. Ethyl cellulose speeds the drying period and acts as a hardening agent for alkyd resin coatings, and its use will tend to restore properties to these coatings which have been impaired by the recent reduction in phthalic anhydride.

Five Years Without Disabling Injury

Two North Carolina mills have lately received the Governor's Award for having completed five consecutive annual state-wide safety contests without a disabling injury. The mills are Sayles-Biltmore Bleacheries of Biltmore, and the Indera Mills of Winston-Salem. The awards were presented during the annual State Industrial Safety Conference held at Winston-Salem May 17 to 19.

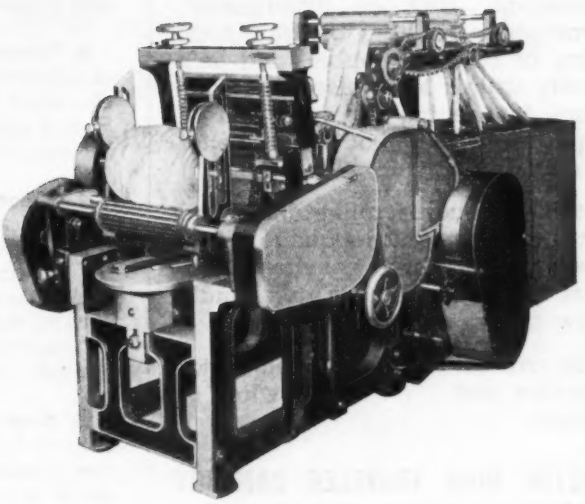
Through its Committee on Technical Training Rehabilitation, the Cleveland Chapter of the National Industrial Advertisers Association is seeking the cooperation of advertising agencies in an educational campaign based on a plan for placing in the hands of wounded soldiers and sailors technical and business information which will bring them abreast of current engineering and commercial developments.

The plan calls for the distribution of thousands of copies of technical, business, and trade papers, which will be obtained from the files of advertising agencies, among hospitals and rehabilitation centers housing convalescent wounded veterans. These copies are now buried in agency files and rarely referred to, once the insertion of a client's advertisement has been checked. Only agencies will be asked to donate copies, because it is felt that manufacturers need their files intact for constant reference in the conduct of their businesses.

Chairman of the committee in charge is John G. Stephan, Stephan National Industrial Advertising Agency, Leader Building, Cleveland, Ohio.

NOW ALL OUT TO WIN!

THEN-



You will no doubt wish to make alterations, replacements and possibly additions to your plant.

We commenced making Textile Machinery in 1795 and we hope that you will give us the opportunity to offer you our services. We are makers of Combing, Drawing, Spinning and Twisting machinery on the English and Continental systems.

We also make a variety of Twisting Frames for all manner of fibres.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS

KEIGHLEY (Yorkshire) ENGLAND

Before
You go back to This . . .

call in a
Victor Service Engineer

Maintenance of old, overworked equipment these days is a tough, discouraging job. A supervisor can't be blamed if he wonders, sometimes, if he couldn't do about as well with a row of spinning wheels!

Don't wait till you get to feeling that way before you call in a Victor Service Engineer!

You'll find the Victor representative is much more than a traveler salesman. He's an experienced, practical consultant on any spinning or twisting trouble, and he's ready with a lot of useful suggestions for getting the most out of equipment that has seen better days.

He is thoroughly mill-trained, and able to "talk your language". And he is well-prepared to help you adjust present methods to handle new fibers, new conditions.

You can get this unequalled Victor Service *fast* . . . write, wire, or phone.

VICTOR RING TRAVELER COMPANY
20 Mathewson Street Providence, R. I.

P. O. Box 1318

ATLANTA, GA.
1021 Virginia Ave., N.E.
Tel. Vernon 1898
2330

GASTONIA, N. C.
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VICTOR
Ring Travelers

Free FOR THE ASKING

MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 172. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y., being sure to give your name and company connection.

1. "The Story of Coated Fabrics," is the title of an article appearing in Vol. 3, No. 2, *Interchemical Review*, published by Interchemical Corp. This article deals with the manufacture of the three main types of coated fabrics; that is, those based on oils, rubber, and nitrocellulose. The history of various methods of processing is covered and sketches show the early types of machines used in treating fabrics. Numerous photomicrographs are shown illustrating various types of finishes obtainable on coated fabrics.

2. Synthetic detergents as a substitute for soaps are discussed in an article appearing in the June-July issue of *The Houghton Line*, published by E. F. Houghton & Co. Various types of synthetic detergents are discussed and their advantages enumerated. These detergents are of special value when the water being used in processing requires treatment.

3. "Z-Metal Chain Belts," is the title of bulletin No. 437, offered by Chain Belt Co., which illustrates and describes various types of chain belts made from ductile ferrous cast metal with a high tensile strength.

4. A handbook on leather belting is being offered by J. E. Rhoads & Sons, which contains information on short-center, modern group, and individual drives. It also contains instructions on how to lace belts or make them endless. Suggestions for improving belt drives, aligning pulleys and belt care are contained.

5. Properties and characteristics of Allymer C.R. 39, a resin with thermosetting characteristics which is suitable for use in impregnation processes, are covered in data sheet No. 44-1, being offered by Pittsburgh Plate Glass Co. Included in the tables are the effects of different types of modifying agents when added to Allymer C.R. 39 before polymerization.

6. A booklet describing how research is developing new uses for rayon and vinyon has just been issued by American Viscose Corp. Uses for rayon, including those for wartime, are mentioned, and industrial applications of vinyon are discussed. Vinyon-E, the elastic yarn, is also mentioned in this booklet.

7. The Mogul Nervous Weld Process which makes possible the salvaging of defective aluminum castings, bronze, grey iron, malleable and steel castings, is discussed in a 4-page bulletin being offered by Metallizing Company of America.

8. "The Problem of Synthetic Rubber," is the title of an article appearing in the June 15, issue of *The Royle Forum*, published by John Royle & Sons. This article describes the vital part that synthetic rubber is playing in the war and is expected to play in the postwar era. Of interest to textile men is reference to synthetic rubber thread made from Ameripol.

9. Spectrophotometer tests to determine the chemical structure of color on herringbone twill are mentioned in the July issue of *Dyelines and Bylines*, published by Calco Chemical Division, American Cyanamid Co.

10. Engineering information on the constant-speed, constant-tension, windup machine for textiles, tapes and coated fabrics, etc. is discussed in a 4-page folder entitled, "*Blueprint for Industry*," being offered by The Industrial Oven Engineering Co. This folder describes how the windup machine operates and contains suggested textile uses for it.

11. Textile leathers are discussed in a series of bulletins being offered by Graton & Knight Co. Bulletins Nos. 1, 2, and 3 cover pickers, leather belting, check straps, and various loom-leather accessories.

12. "Holding to Pre-War Standards," is the title of a bulletin offered by Wildman Mfg. Co. This bulletin states that today despite many new problems, Wildman machines must be as accurate, as dependable and efficient as they were in pre-war days.

13. The Mogul metallizing gun is described in Bulletin No. 16, issued by Metallizing Co. of America. The various parts that make up Model P guns are described and illustrated. A table is contained indicating the average speeds of spraying various types of metals in pounds per hour.

Is Your Textile Plant Equipped for Post War Production?

- War-time contracts have attracted many new-comer competitors to *your* field. They *will be daring* and resourceful. They will not believe in traditional restraints, tough tasks. They will solve old problems, plan new methods. They will invest war-time earnings in modern equipment, up-to-date methods.

- Shield your business from this threatened invasion. Shields Modernizing Methods provides protective measures.

- Shields Modernizing Methods applies basic engineering principles to the processing problems in *your particular branch* of the textile industry. Shields engineers devise methods, adapt or design new equipment; produce and install needed devices; train help for efficient, automatic and low-cost production.

- For present or post-war delivery, Shields engineers will welcome an opportunity to work with you *right now.* Let these creative, practical counsellors discuss with you your problems, your ideas for new products and new equipment . . . or perhaps consider modernizing your present plant.

Shields Method equipment consists of Knitting . . . Dyeing . . . Drying . . . Finishing . . . Cutting . . . Pressing machinery . . . for improving the quality and lowering the manufacturing cost of Tubular Knit Underwear and Outerwear

Grand Rapids Textile Machinery Co., Grand Rapids, Michigan, U. S. A.

Since 1865 Globe equipment has been provided for each new method of cotton and rayon yarn dyeing.

▼

This same policy of adequate mechanical preparedness places Globe in ideal position for package dyeing, to meet present military requirements and civilian needs in the days to come.

▼

YOU CAN RELY ON GLOBE

▼

Globe DYE WORKS CO.

We are Dyers, Bleachers and Mercerizers of Cotton skein yarns and warps.

▼

Dyers of rayon, spun rayon, Aralac, nylon and novelty yarns.

Package Dyeing on Tubes

FRANKFORD, Phila. 24, Pa.

FREE FOR THE ASKING

14. Gear motors with output shaft speeds varying from 780 to 5.7 r.p.m. and ratings varying from ⅛ to 75 hp. are covered in bulletin GEA-1437D, being offered by General Electric Co. This bulletin describes and illustrates various types of gear systems used and installations of such motors.

15. Absenteeism is discussed in bulletin No. 144, published by George S. May Business Foundation, and entitled, "What Management Can Really Do to Reduce Absenteeism." This bulletin covers various phases of absenteeism and suggests solutions possible to management. Also, it points out that profits and shifting hours reduce absenteeism.

16. "The Noise Primer," is the title of a booklet being offered by General Radio Co. which describes the technique of noise measurements and of noise analysis, respectively. This booklet is divided in several parts covering such items as the sound-level meter, the decibel and instructions on how to use the sound level meter, practical applications of the meter, analysis of noise, how to use the sound analyzer, vibration and sound, the vibration meter, etc.

17. "$22,000,000 Worth of Unused Housing," is the title of a folder being offered by the Scranton Chamber of Commerce and should prove to be of interest to mills considering relocation. This leaflet also contains a map showing the location of vacant houses in the greater Scranton area, railroads, highways and other arteries of transportation.

18. Spiral-wound high and low pressure gaskets are covered in catalog No. 292, just released by United States Gasket Co. Included among the gaskets discussed are those for boiler handholes and tube caps, boiler manholes and various types of joints.

19. "Brick and Concrete Restoration," is the title of a booklet being offered by Truscon Laboratories, Inc. This booklet deals with the care of building exteriors and deals with repairing, pointing, caulking and StoneTexing the brick or concrete and also painting the steel.

20. Adhesives or cements of various types are covered in Catalog Section 916 offered by The B. F. Goodrich Co. In addition to the field of adhesives, the materials covered also serve as fabric coatings, binders, sealers, etc. Instructions on application are contained.

21. Degasification of water is covered in bulletin No. 4076 being offered by Cochrane Corp. This bulletin illustrates equipment provided for the removal of oxygen and carbon dioxide from water without the use of steam. Different types of deaerators available are described, which are capable of removing gases in water.

PASTE IT ON A POSTCARD

This mailing coupon is a convenient size to paste on a penny postcard. Circle **the numbers of the catalogs you want** which correspond to the numbers on the descriptive paragraphs. Fill out the coupon **legibly** and **completely.** Paste on a postcard, or put it in an envelope if you prefer, and mail it to Textile World, 330 W. 42nd St., New York 18, N. Y.

MAILING COUPON

TEXTILE WORLD,
330 West 42nd St., New York 18, N. Y.

I have circled below the catalogs I want, as listed in your August "Free for the Asking."

1 2 3 4 5 6 7 8 9 10 11

12 13 14 15 16 17 18 19 20 21

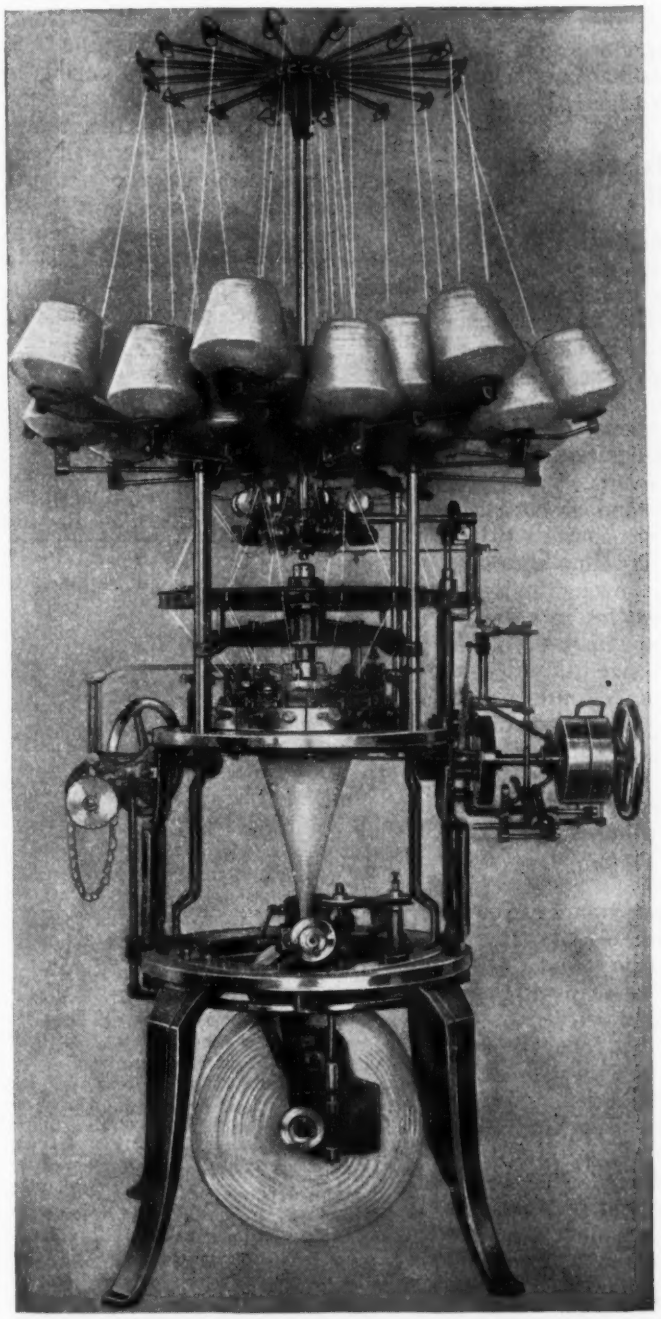
My Name..... Title.....
(PLEASE PRINT)

Company.....

Street..... City & State.....

HOLD THAT LINE!

In today's economy—knitting mills are striving to maintain output with limited floor space and curtailed manpower. The battle cry is "Hold the Production Line." Every effort is made to prevent a sag or slackening. Right in the center of this fight in many modern mills throughout the land is the



WILDMAN

Multiple Feed Rib Machine

the 16-feed machine that will replace an 8-feed machine on exactly the *same* floor space and at the same time, actually

DOUBLE PRODUCTION

It uses only a third more power to do this—besides giving a finer, more uniform product, and easy, trouble-free operation. Write today and learn of its manifold advantages, to

WILDMAN MFG. CO., NORRISTOWN PA.

★

FOR AMERICA—THROW

YOUR SCRAP

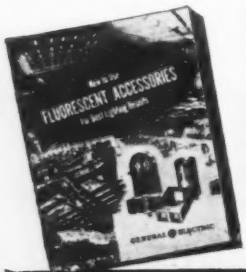
INTO THE FIGHT

JUST PRESS THE BUTTON

You can reduce fluorescent lighting maintenance to the simple operation of pressing a reset button before relamping. With G-E Watch Dogs, it's no longer necessary to make frequent starter replacements. There's no "know how" needed. Just press the button and insert a new lamp. It's so easy anyone can do the job.

And that's not the only reason why fluorescent users are installing G-E Watch Dog Starters. These starters eliminate annoying blink and flicker, safeguard ballasts, conserve current and can outlast five ordinary starters. Switch to G-E Watch Dogs and begin to enjoy economical and efficient lighting service.

Here's a booklet that tells how to use fluorescent accessories for best lighting results. Your free copy is waiting. Write to Section G 841-109, Appliance and Merchandise Dept., General Electric Co., Bridgeport, Conn.



Hear the General Electric radio programs: "The G-E All Girl Orchestra" Sunday 10 P.M. EWT, NBC. "The World Today" news every weekday 6:45 P.M. EWT, CBS.

BUY WAR BONDS AND KEEP THEM

GENERAL ELECTRIC

BOOSTING EMPLOYEES' Morale

"Cotton Goes to War" Draws Large Audiences

Typical of the many displays of the War Department's movie, "Cotton Goes to War" before groups in the textile industry, was the victory rally staged by the management of the four Cone mills at Greensboro, N. C., last month. Four thousand employees attended. Bernard M. Cone made an opening address. A 24-piece band from ORD supplied music. Details of this morale-boosting movie were given in TEXTILE WORLD for June on page 172 and for July on page 162.

Advocates Dispensaries for Textile Mills

The value of a medical service in a small plant was pointed out in an address at the business meeting of the Philadelphia Textile Manufacturers Association on July 21 by Dr. Glenn S. Everts, Medical Society of the State of Pennsylvania, Commission of Industrial Health and Hygiene.

"The War Manpower Commission," stated Dr. Everts, "actively is interested in safety and absenteeism. Certain classes of war-contract plants must report their lost-time accidents to the government, showing the breakdown by departments, as an effort to intensify the program in those plants to cut down their accidents."

"If a plant, having a contract with the Army or Navy, shows signs of decreased production, traceable, in part, to a poor accident record, the WMC demonstrates its anxiety in the matter even to the extent of advising a medical service to be employed to help offset that experience."

"Post-war planning groups are quite concerned," continued Dr. Everts. "Executives and medical departments, particularly of the larger plants, have already well-defined programs for the reemployment of their ex-servicemen who are mustered-out with some major physical handicap. The same problem will face the smaller plants."

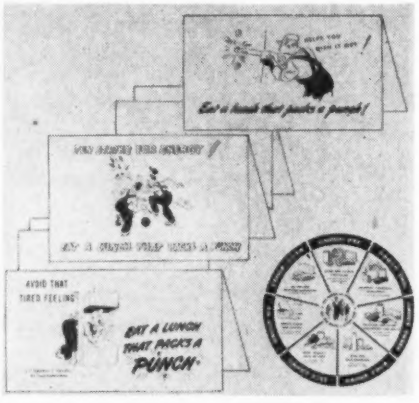
The Philadelphia Chamber of Commerce and Board of Trade has set up a Health Committee which is assisting small textile mills and other industrial plants, located close together, to establish a central dispensary, permitting small mills to obtain the advantages of medical services at normal costs. This program has been endorsed by the association and some of its members already are using central dispensaries.

Mills Use Paid Advertising to Combat Absenteeism

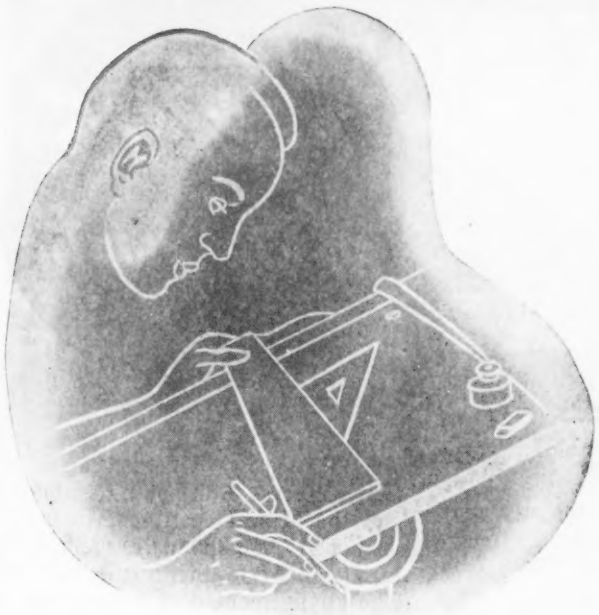
A plan has been worked out by textile executives and the three newspapers of Rutherford County, North Carolina, in conjunction with the U. S. Employment Service for bringing to the attention of the workers and the public the vital need for textile production. The plan calls for a series of page advertisements each week for a month in the three county newspapers, paid for by the mill owners and written to show the vital need for workers in essential textile plants. News items also are to be carried, combating absenteeism.

New Labor-Management Committees

Among the mills which have recently organized Labor-Management Committees under the plan for the



WAR FOOD ADMINISTRATION has prepared a kit of visual aids that will lead the war worker into the paths of a lunch that packs a punch. The Superintendent of Documents, Washington 25, D. C., will send this kit for 40c. It contains four posters, seven "table tents," and folder. The program stresses a properly balanced diet for war workers involving what is called the "Basic 7" food groups. These are (1) green and yellow vegetables; (2) oranges, grapefruit, tomatoes, raw cabbage, or salad greens; (3) potatoes and other vegetables and fruits; (4) milk and milk products; (5) meat, poultry, fish, or eggs; (6) bread, flour, and cereals—natural whole grain, enriched, or restored; (7) butter and fortified margarine.



Proved

speed-control experience has no substitute

● In the furious pace of war production, industry has learned that the *correct* application of variable-speed control is vitally important for peak production-machine efficiency. In a number of plants there has been a rush to get some form of speed control and "make it do." Many of the problems caused by the inexperienced application of "just-any-type" speed control have knocked at our door for solution.

As speed-control pioneers, the Lewellens have proved again and again that there is no substitute for experience in their highly-specialized field.

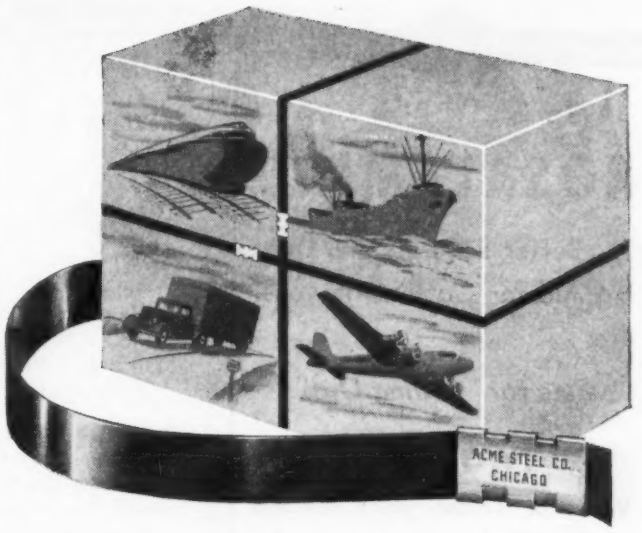
In the challenging pace of a new era of peacetime production, those who plan early and wisely will garner full strength to meet its many complexities' Your need for the highest skill in applying variable-speed control to your production machines has also been proved. Let us show you the real value of Lewellen's experience. Wire, phone or write, NOW!

LEWELLEN MANUFACTURING COMPANY, COLUMBUS, INDIANA

LEWELLEN

Variable Speed { TRANSMISSIONS / MOTOR PULLEYS

★ Lewellen knows speed control



By Rail • By Water • By Road • By Air

"BOUND TO GET THERE"

with *Acme Steelstrap*

● Wherever shipments move . . . land, sea or air . . . those packs reinforced with Acme Steelstrap are "Bound to Get There." The thousands of products of the nation's industry . . . destined for overseas or the market places at home . . . are protected beyond production lines when you see the Acme seal.

And when you see the figure of Doc. Steelstrap, you find the symbol of Acme engineers . . . men whose business is the scientific reinforcement of shipping packs . . . from the smallest container to carloads of freight.

On every fighting front there is evidence of Doc.'s skill on cases, cartons, crates, bales, and skidloads.

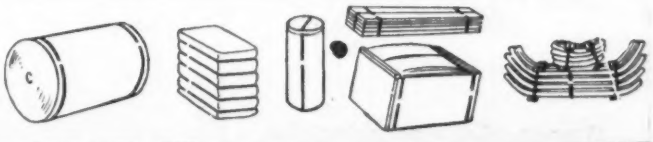
Today, Steelstrap and Doc. have a full-time war assignment in Army and Navy depots, in arsenals and in war industry. Uncle Sam calls it "pack it right to reach the fight" . . . we've always called it "Bound to Get There." . . . When his war work is finished, Doc. will be ready to discuss the Steelstrap job of reinforcing your post-war business . . . wherever it may travel.

STEELSTRAP IN THE TEXTILE INDUSTRY

There are specialized applications of Steelstrap that mean—

- **Economy in packing, in handling, in loading**
- **Protection against damage, pilferage and loss**
- **Insurance of safe deliveries**

On bales, cartons, bundles and cases . . . on skid loads and for bracing car loads . . . each strapping procedure is specialized, and a tangible contribution to manufacturing progress and economy.



ACME STEEL CO. CHICAGO

ACME STEEL COMPANY

2838 ARCHER AVENUE, CHICAGO 8, ILLINOIS

QUALITY RICHMOND PRODUCTS

ROSALAMINE

The Better Scouring and Dyeing Aid for Cottons, Rayons, etc.

Fine for "Boiling Out"

TWO TYPES

White or Yellow, which contains an organic chrome compound for conserving dyestuff.

Complete details upon request

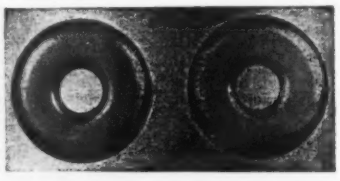
At Your Service

RICHMOND OIL, SOAP & CHEMICAL CO., Inc.
153-155 RICHMOND STREET
PHILADELPHIA 25, PA.

Higher Tension Efficiency

with WAYNE

TENSION DISCS



Wayne tension discs provide uniform tension with a minimum of wear. Higher production efficiency is assured. Constructed of hard chrome plated steel. Write for price and delivery and samples.

Wayne Manufacturing Co.
Honesdale, Pa.

Manufacturers of Textile Mill Supplies

War Production Drive of WPB are the following:

Florence Thread Co., Riverside, N. J.

American Felt Co., Glenville plant, Glenville, Conn.

Sun Silk Co., Central Falls, R. I.

Tifton Cotton Mills, Tifton, Ga.

Marshall Field & Co., Draper, S. C.

Prairie du Chien Woolen Mills Co., Prairie du Chien, Wis.

Recent "E" Awards

Among the recent "E" Awards are noted the following:

U. S. Rubber Co. plant at Shelbyville, Tenn.—second star.

U. S. Rubber Co., Stark Mill, Hogansville, Ga.—"E" pennant.

Springs Cotton Mills, Chester, S. C., seven mills—first star.

Vanity Fair Mills, Vanierial Corp., Reading, Pa.—"E" pennant.

Goodyear-Decatur Mills, Decatur, Ga.—"E" pennant.

Goodyear-Decatur Mill, Rockmart and Cartersville, Ga.—"E" pennant.

Neponset Woolen Mills, Canton, Mass.—"E" pennant.

Gossett Mills, Anderson, S. C., three plants—additional star.

Aid to Employment of Disabled Veterans

American Mutual Alliance, Chicago, a nation-wide organization of mutual insurance companies, has available for distribution to employers a guide to the adoption of special plans whereby disabled veterans may be employed with full efficiency and normal value to themselves and their employer. The booklet is part of a program to expedite and speed the return of veterans and other disabled persons, particularly those handicapped by injuries received in the service of their country, to their proper place in economic life.

On Evaluating Apprentices

A 20-page booklet entitled "Evaluating Apprentices," issued by Apprentice-Training Service, War Manpower Commission, Washington, D. C., gives technical advice on how to determine the cost of training apprentices, as compared with the value of their production while in training, as well as how to record the skills apprentices acquire as they advance from one step of their training to the next. It has been prepared especially for training directors and others responsible for apprentice training.

News of the month

The VT Loan. The agreement between Reeves Bros. and its affiliates and the Navy Department for a VT loan of $17,000,000 marks the first VT loan granted to the textile industry. The arrangement does not involve an initial government advance of money but rather is a guarantee that the lenders will not suffer any financial loss. The VT loan is a hybrid between the V loan, which was originally a production loan advanced to a company to get into production, and the T loan which is planned to aid companies during the termination period. This loan will enable the company to take care of cancellation claims of its suppliers and sub-contractors, in case the government cancels a large numbe rof contracts on which Reeves Brothers are working. It will also serve as a help in the conversion from all-out war production to the manufacture of civilian goods.

Prepare to Take Over, WLB Man Urges. Labor and management must learn to solve problems without running to the government for help, according to Dr. George W. Taylor, public member of the National War Labor Board, in an address last month before the Southern Conference on Human Relations in Industry, at Asheville and Blue Ridge, N. C. The WLB wants to close up as soon as possible after the war and go home, he said. The right to strike and the right to lock out must be returned to labor and management, and management

YOU can prevent too little WASTE PAPER too late.

Don't postpone paper saving until you can do "a big job of it" tomorrow. Save what you can today! Every hour is precious—the last hour of World War I cost the Allies 5,000 men. Salvage old papers, magazines, circulars, letters, file copies, wrapping paper—it all makes shell, food and blood plasma cartons our fighting men must have NOW—not tomorrow.

PAPER SAVED today FIGHTS tomorrow.

THE WETTER YOUR PLANT EQUIPMENT AND WALLS THE MORE YOU NEED

DAMP-TEX ENAMEL

Proved Fungus Resistant by FUNGUS TEST

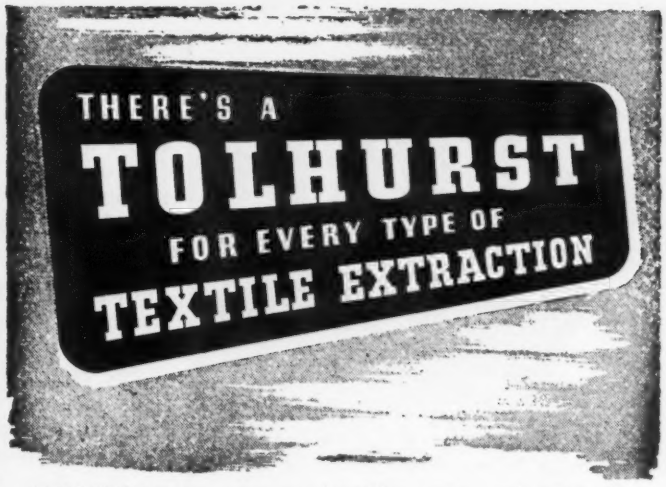
PRESERVES AND BEAUTIFIES DINGY WET WALLS AND EQUIPMENT

Dark, dingy walls cut down efficiency Rusty, neglected equipment increases depreciation costs. Rot, bacteria and fungus play havoc generally. The Damp-Tex system was created for the plant where the presence of moisture, heat and other unusual conditions hinders proper surface maintenance. Over 4,000 plants have discovered its superiorities. Write for our trial offer.

Proved Lactic Acid Resistant by ACID TEST

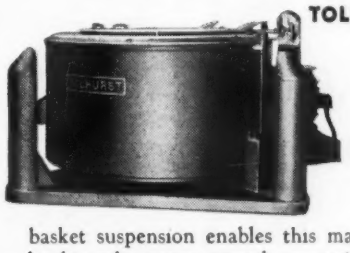
STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada.



TOLHURSTS have proven themselves time and again the fastest, most efficient extractors in the textile field. For every need, for every material, the right Tolhurst will do it better and faster

TOLHURST "SUPREX"—For cotton raw stock this 48" extractor has proven its worth, in speed of extraction, economy and production. Smooth, efficient operation is assured by "SUPREX" suspension principle. Higher rotational speeds mean quicker and greater extraction. Timer control eliminates guessing when load is finished.



TOLHURST "CENTER-SLUNG" Every feature of the "CENTER-SLUNG" has been designed to produce greater volume in shorter time. Unexcelled for underwear, tubing, hosiery and other fabrics. The exclusive center-of-gravity basket suspension enables this machine to handle unbalanced loads and assures smooth operation. Available in 40", 48" 60", 72" basket sizes.

TOLHURST "SOLID CURB" Designed for rapid handling of small loads, the Tolhurst "SOLID CURB" Extractor is ideal for yarn, hosiery and other textiles. Motor drive. Basket sizes 20" and 30"

Write for detailed literature

ARMY E NAVY

Tolhurst CENTRIFUGAL DIVISION

AMERICAN MACHINE AND METALS, INC.

EAST MOLINE, ILLINOIS

It's as simple as that . . . just jot down in your postwar planning file to specify U. S. products. And, when peace comes, we'll be able to supply you with *greatly improved* machines, made better by research and development. Uncle Sam now uses our production efforts, but after the war plan on using:

- **U. S. ACME TWISTERS for spool or headless package**
- **U. S. JUMBO FACE DRIVE TWISTERS for large headless package work**
- **U. S. ACME DOUBLER TWISTERS, large package**
- **U. S. REDRAWS and SPOOLERS**

U. S. TEXTILE MACHINE CO.
SCRANTON, PENNSYLVANIA, U. S. A.

LeaTex

The name that means leadership in

CHEMICAL SPECIALTIES

for the

TEXTILE INDUSTRY

"Always Reliable"

LEATEX CHEMICAL COMPANY
2722 N. HANCOCK ST., PHILADELPHIA, PA.

must insure maintenance of all its rights by extending adequate cooperation in solving the problems of labor relations. Management will benefit, he said, by helping to work out and win recognition for a joint bill of rights.

Hosiery Men to Meet at Roanoke. Southern Hosiery Manufacturers' Association will hold its annual convention at the Hotel Roanoke, Roanoke, Va., Sept. 22 and 23. The association had first planned to meet at the Grove Park Inn, Asheville.

Defines Felt. The Felt Association, Inc., New York, has adopted the following definition as correctly describing the principal products of members of the association: "Felt is a fibrous material which is built up of interlocked wool fibers by mechanical and chemical action, moisture and heat. The blend may consist of wool and other fibers."

Employment Clearing House. The American Association of Textile Chemists & Colorists, in conjunction with its annual meeting in Atlantic City, N. J. Oct. 12 to 14, is planning to hold an employment clearing house. Here technicians already employed in the industry, and those with satisfactory education and training who are desirous of entering the textile field can meet with prospective employers in personal interviews.

More Cotton Movies. In an effort to stimulate interest in goods for civilian consumption and raise the morale of the industry's workers, the board of directors of the Cotton-Textile Institute has authorized a series of motion picture shorts as a follow-up to the War Dept., film, "Cotton at War."

Federation to Have New Offices. National Federation of Textiles, Inc., now located at 15 West 37th St., New York, has leased the eleventh floor at 389 Fifth Avenue, corner of 36th St., where it will move about Oct. 1. The new office will provide better facilities for meetings than are available at present. The service bureaus of the Federation will also be located at the new quarters.

Wool Shrinkage Laboratory. The Laboratory Advisory Committee of the Boston Wool Trade Association has discussed the desirability of establishing a wool shrinkage laboratory and made its report. Among other conclusions, it found that the Customs Bureau method of determining shrinkage produced generally satisfactory results, except where wool with high vegetable content was involved. Laboratory treatment was thought to present no serious difficulty. Accurate sampling was considered more of a problem.

Riverside Develops New Processes. Riverside & Dan River Cotton Mills have secured patents on treatment of fabrics with synthetic resins. Officials said that what is known as the Bartell and Jennings system has been used as the master pattern, and for some time the Danville mill has been carrying out experiments in its pilot plant.

Resin-Treated Synthetics. Several patents have been obtained in England, whereby synthetic yarns, such as regenerated cellulose, cellulose acetate, nylon, etc., may be treated with alkyd resins. It is said that the treatment checks the tendency of such yarns to slip when woven into cloth by binding them at their point of crossing.

This & That. Possibilities of substituting flax duck for cotton duck in filling military needs, in view of the critical cotton duck situation, were discussed by the Flax Industry Advisory Committee, WPB. . . . Navy Department has established escalator clauses to assist in the completion of its contracts and still protect contractors until definite OPA ceilings are established. . . . Chemicals Bureau of WPB has recently increased small-order exemptions for acetic acid, acetic anhydride and acetaldehyde. . . . A new poplin fabric, 70% rayon and 30% cotton, is offered by Traub, Lyons & Oppenheim, New York. It is vat-dyed, sanforized and treated with a durable water-repellent for rainwear and sports clothes, and, it is said, equals or surpasses equivalent-weight cotton fabrics. . . . American Woolen Co. reports net profit for first half of 1944 as $4,290,431 against $4,543,207 for first half of 1943. . . . WMC has terminated the manning table plan for orderly withdrawal of workers into the armed forces. . . . Eight colleges are offering one-week courses on "Quality Control by Statistical Methods" sponsored by Philadelphia QM Depot, covering dates from Aug. 16 to Nov. 23.

TEXTILE CALENDAR

American Association of Textile Chemists & Colorists, Southeastern Section, Callaway Auditorium, La Grange, Ga., Sept. 9, 1944.

Industrial Fiber Society, fall meeting, Callaway Auditorium, La Grange, Ga., Sept. 22 and 23, 1944.

Southern Hosiery Manufacturers Association, Annual Meeting, Hotel Roanoke, Va., Sept. 22 and 23, 1944.

American Association of Textile Chemists & Colorists, Annual Convention, Claridge Hotel, Atlantic City, N. J., Oct. 12 to 14.

Quality Fabrics Call for Perfect Carding

Keenly penetrating Wissco Card Clothing produces results that help you get finer finished fabrics. The staples are made of special steel—clean cut—precision set and ground—and microscopically inspected. In all standard foundations; and Wissco Special Foundation, a tough, resilient foundation which permits up to 200 lbs. more tension and eliminates stretching and blistering. Glass hardened points, too. Write for literature. Wickwire Spencer Steel Co., 500 5th Ave., New York 18, N. Y., Buffalo, Chicago, San Francisco, Worcester.

Wissco

CARD AND NAPPER CLOTHING

for wool, worsted, cotton, silk, asbestos and specialties

Both electric and gasoline models

TENNANT FLOOR MACHINES

NOW AVAILABLE

The Tennant System of floor maintenance for textile plants is a *dry cleaning* process,—no scrubbing or mopping — it maintains safe, smooth floors without interfering with plant operation,—and most economically.

Under present forced production schedules it is more important than ever to reduce accidents and expedite the movement of materials through the plant in order to increase efficiency and production.

The service of Tennant field representatives is available free of charge. If you have cleaning and maintenance problems *now* or want to make plans for the *future*, *write* or *wire today*.

Repairs for your Tennant machines and the accessories and materials required to keep your floors in best condition are always available.

Leaders in the textile field use the Tennant System to obtain smooth floors that are easily kept free of lint and oil spillage.

G. H. TENNANT CO. Established 1870 — 2586 North 2nd St. Minneapolis, Minn.

Pioneers in modern floor maintenance

TENNANT SYSTEM OF INDUSTRIAL FLOOR MAINTENANCE

5 reasons why you should DESIZE WITH EXSIZE*

***EXSIZE,**

the standard enzyme desizer

1. Safe, even for the sheerest fabrics. Contains no harsh alkalis or chemicals. Gentle, thorough action. Cannot weaken cloth.
2. Works evenly and rapidly. Leaves materials soft, elastic, and supple—with good "hand."
3. Easily handled and stored. Simple to prepare and use. Keeps well in cool storage.
4. Uniform results. Never does a spotty job. Turns out same clean, absorbent fabrics every day.
5. Does an effective job of desizing at very low cost.

Use our laboratories for your tests. No obligation. Or, if you prefer, a trained Pabst field man will gladly work with you in your own mill. Write for our free booklet.

Pabst Sales Company

CHICAGO, ILLINOIS

Warehouses at New York, and Textile Warehouse Company, Greenville, S. C.

Copr. 1944 Pabst Brewing Company, Milwaukee, Wisc.

NEWS ABOUT Suppliers

Tolhurst Centrifugal Division, American Machine & Metals, Inc., has moved its New York district offices, formerly located at 100 Sixth Avenue, to the Woolworth Building, 233 Broadway. A. Winkler Prins is district manager. The company's manufacturing plants are in East Moline, Ill.

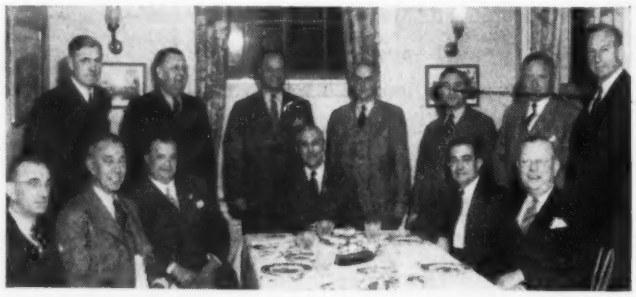
Steel Heddle Mfg. Co., Philadelphia, Pa., with four plants in U. S. A. and Canada, has appointed China Corp. to look after its interest in China after the war. The China Corp's. U. S. headquarters are located at 20 Pine St., New York under William Hunt & Co. management.

Hollister-Moreland Co., Spartanburg, S. C.—Mrs. Loree Hollister Appell has retired from the partnership, and the company will continue under the same name, with R. B. Moreland as owner and directing head. Hollister-Moreland Co. was organized in November, 1942, to act as distributor for The Merrow Machine Co., American Safety Table Co., Dinsmore Mfg. Co. and H. Maimin Co. The company has recently occupied new offices at 611 Montgomery Building, Spartanburg. J. Bion Moreland has joined the company and will cover the states of Tennessee, Georgia, and Alabama as field representative.

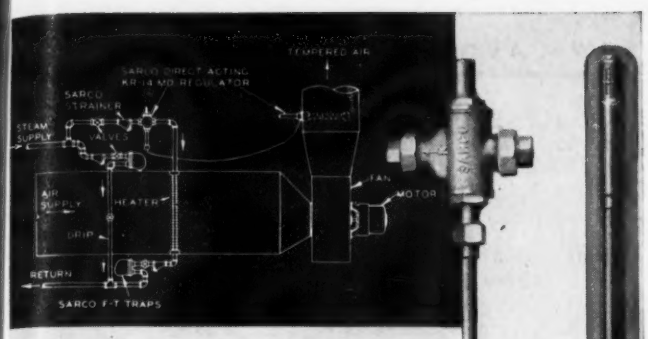
Textile Machine Works, Foundry Division, Reading, Pa., has been admitted to membership in the Gray Iron Founders Society, national association of manufacturers of engineering gray irons.

ALBERT P. MARCH, who has become associated with Smith, Drum & Co., Philadelphia, in their textile machinery division as sales representative. He is a Philadelphia Textile School graduate and was associated with National Aniline & Chemical Co.'s Philadelphia office for 16 years.

Warwick Chemical Co.'s new Richmond Works plant at Wood River Junction, R. I., was dedicated on June 28 and is expected to be in operation early in August. This is the fourth operating unit of Warwick Chemical Co., other plants being located in West Warwick, R. I., Rock Hill,

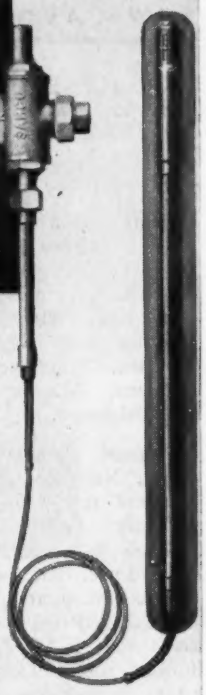


BEACH SOAP SALES MEETING—The annual spring sales meeting of the Beach Soap Co. was held recently at Lawrence, Mass. G. R. Fulton, president, spoke on the outlook for soap and the company's plans for future development. L. T. Howells, vice-president, discussed technical service and sales, and there was a talk on advertising by Gordon Lane of James Thomas Chirurg Co. Shown above, left to right, are the following: sitting, C. F. Mudgett, Carl M. Muller, Ben Silverstein, L. T. Howells (vice-president), Mart Baird and C. E. Cimiotti; standing, Kirk Batcheller, Jim Drury, Emmet Petrin, Frank Allen, Maurice Bassinow, Fletcher Lawson, and G. R. Fulton (president).



SIMPLE TEMPERATURE CONTROL *for* AIR-HEATING OR COOLING

The Sarco KR-14 temperature regulator is a self-operated, liquid expansion type control, packless and easy to install. Used for air conditioning, refrigeration, dryers, ovens, ducts and all types of industrial process work. Temperatures 0° to 400° F., ½ to 8". Ask for Catalog No. 600.



KR-14

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475 Fifth Avenue, New York 17, N. Y.
SARCO CANADA, LTD., 85 Richmond St. W., TORONTO, ONT.

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Our large, modern plant is tooled-up to take care of your Gear orders whether large or small—any quantity—any material—any size. We also produce Sprockets for Roller and Silent Chain Drives.

We are noted for our precision workmanship, minute inspection, quality and dependable service.

P.S. We maintain a large, precision surface grinding department and can offer you time on our production machines. Ask for details.

"Industrial"

Cut Gears • Cut Sprockets • Cut Racks

INDUSTRIAL GEAR MFG. CO.
4547 VAN BUREN STREET CHICAGO 24, ILLINOIS

IS YOUR FLOOR A CHUTE-the-CHUTE?

Correct it with *SPEEDI-DRI*

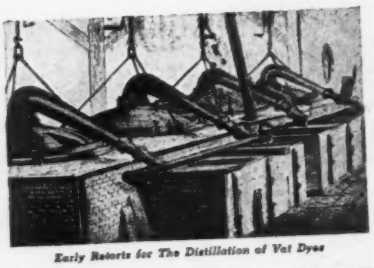
OIL-SWEATING, greasy, slippery floors are no longer a hazard in plants which have discovered SPEEDI-DRI. SPEEDI-DRI provides no skidding and no kidding! This oil-thirsty, fire-retardant compound promptly soaks-up ingrained grease . . . without scrubbing. Simply spread SPEEDI-DRI, in every department, on oily areas; then sweep it up ... and, with it, all greasy soakage. Wood, concrete, and metal floors regain their original surfaces. Aisles are brightened, cleaning-labor saved, plant morale lifted, production speeded. Join the rush of industry's top-flight maintenance-men to the use of SPEEDI-DRI, the original oil and grease absorbent. Write for literature and FREE SAMPLE—today!

SUPPLIERS: East—Refiners Lubricating Co., New York 1, New York.
Midwest & South—Waverly Petroleum Products Co., Philadelphia 6, Pa.
West—Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

SPEEDI-DRI
OIL AND GREASE ABSORBENT

THE ROLE OF CHEMISTRY In the Development of Textiles

NO. 7 OF A SERIES



Early Retorts for The Distillation of Vat Dyes

BRIGHT DYES FROM BLACK TAR

For thousands of years man drew on the plant and animal life around him for coloring. With the coming of the industrial revolution the demands of world commerce grew and man searched for new sources of color. In the waste of a distillation of vegetable indigo Otto Unverdorben discovered Anil in 1826. He named it Crystalline.

A little later—1834—F. F. Runge, a German scientist, isolated Kyanol from the refuse of the gas houses, the black sludge called coal tar. Kyanol yielded a brilliant blue when treated with chloride of lime, and upon further investigation was proved to be identical with Anil.

In 1843 August Wilhelm Hofmann, a German professor in England, isolated Benzol from coal tar. But because England was importing vegetable dyes from her colonies, so little interest was shown in Hofmann's chemical researches that he reluctantly went back to Germany.

After Hofmann left England, one of his pupils, William Henry Perkin, discovered a method of producing purple from Anil and called it Mauveine. This led to the development of the vat dyes of today. Perkins' greatness lay not only in his brilliant discovery—but also in his realization of its great commercial possibilities. The same happy combination of gifted research and practical application makes the contributions of today's textile chemists to the industry so varied and so valuable.

BURKART-SCHIER CHEMICAL CO.

Manufacturing Chemists for the Textile Industry. In peace and war, our products are always on the job improving the finish of yarns and fabrics.

CHATTANOOGA, TENNESSEE

BURK-SCHIER

PENETRANTS DETERGENTS SOFTENERS REPELLENTS FINISHES

NEWS ABOUT SUPPLIERS

S. C., and Chanute, Kan. Sales offices are at 580 Fifth Ave., New York, and a research laboratory at 221 West 57th St., New York.

Watson-Williams Mfg. Co., Millbury, Mass., has added John W. Littlefield, of Greenville, S. C., to its southern sales staff. Mr. Littlefield's territory will include South Carolina, Tennessee, Georgia, Alabama, Mississippi, Texas and Oklahoma.

General Aniline & Film Corp., New York, N. Y., in a recent report to the Alien Property Custodian, states through its president, George W. Burpee, that the company has become thoroughly Americanized and that all connections with I. G. Farben (the former parent German company) through members of the management has been terminated through the installation of new management. The Grasselli Plant of the General Aniline Works Division has received the Army-Navy "E" Award, as has also the Ansco and Ozalid Products Divisions.

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has announced a broad policy of veteran reemployment. More than 5000 of its former employees are in the armed forces, or over 25% of the total number of employees prewar. Pittsburgh Plate Glass Co. has appointed Guy Berghoff to be director of public relations, with Bryan England as assistant director. For the last 10 years, Mr. Berghoff has been assistant glass advertising manager. More recently, much of his time has been given to glass sales promotional work and to glass-product publicity. Mr. England, who has directed the company magazines, will continue to edit these publications, and will assist in publicity work.

Brown Instrument Co., Philadelphia.—S. A. Berryann, assistant export manager for Brown Instrument, has been awarded honor medal for the highest average attained in chemical engineering, junior year, at the Drexel Evening School of Drexel Institute, Philadelphia.

Mixing Equipment Co., Rochester, N. Y. has appointed Edgar A. Rogers as exclusive representative in Georgia, Alabama and the major portion of Tennessee. He will make his headquarters in the Chattanooga Bank Bldg., Chattanooga, Tenn.

LEONARD SHAPIRO, who has been promoted by Warwick Chemical Co., New York, from the position of research assistant to director of textile research, in which capacity he will work directly under Raymond A. Pingree, chemical director. Mr. Shapiro spent seven years as chief chemist and director of laboratories and research at Interlaken Mills. He has been with Warwick's research department for a year and a half.

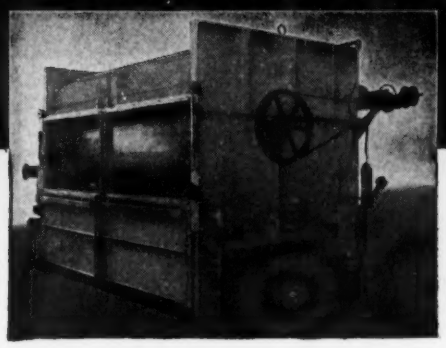
Hercules Powder Co., Wilmington, Del.—Russell H. Dunham has resigned as chairman of the board but will remain as a director and chairman of the executive committee. Charles A. Higgins, president, has become chairman of the board also.

Firestone Tire & Rubber Co., New York, recently staged an exhibit at the Wal-

CAPT. MACK E. KITTAY, who has been appointed by National Starch Products, Inc., New York, to be manager of its southern division, with headquarters at 1201 Commerce Ave., Houston, Texas. Prior to his enlistment in the U. S. Army, he was for 13 years with National Adhesives Corp (now a division of National Starch Products) serving customers in the metropolitan New York area. He has returned from two years in active Army service.

The Flat Line

TYPE TLBT DYE KETTLE
for SPUN RAYONS & BLENDS



Promotes that wool like hand. Extra large drum type reel helps goods balloon, move around and change folds, while Multi-Grip partially knurled surface (Pat. Pend.) prevents slipping.
Wide adaptability and substantial savings in dyestuffs.
CIRCULAR ON REQUEST.

RIGGS AND LOMBARD
INCORPORATED
Foot of Suffolk Street ··· Lowell, Mass.

NEW MODEL • HIGHEST ACCURACY
CHRONOMETRIC
TACHOMETER

Readability to 1 RPM per division. Guaranteed accuracy well within ½ of 1%. Indicates RPM directly on the dial without any calculations over a fixed period of 6 seconds. Negligible torque. Two models with ranges 0-1000 RPM or 0-10,000 RPM, each suitable for double rated range.

Write for Bulletin No. 715

HERMAN H. STICHT CO. INC.
27 PARK PLACE NEW YORK, N. Y.

So that
"BIRDS" *may see at night*

When night comes and our "War Birds" come home to roost at temporary front-line airfields, floodlights insure safe landings. But because these *are* temporary fields the floodlights are portable and get their juice through long extension lines. Under such conditions these extension lines receive none too gentle treatment. To give extra strength and safety tough rayon tension cord is built into these lines thereby minimizing breakages and power failures.

Most of the rayon which goes into these extension lines . . . as well as into tires, coat linings, parachutes, etc. . . . move up to the production front in perfect condition on Allen Rayon Warper Beams.

THIS MONTH BUY ANOTHER WAR BOND

ALLEN COMPANY

130-156 River Rd., New Bedford, Massachusetts
So. Rep. Mr. L. E. Wooten, Fort Mill, S. C.
Manufacturers of Warper Beams for
HIGH TENACITY RAYON, NYLON, ACETATE AND RAYON

Where Do You WANT THE AIR?

Adjustable outlets make Parks Traveling Cleaners

- MORE FLEXIBLE
- MORE EFFICIENT

Volume of air may be regulated, where the air is aimed may be adjusted. Both air streams may be "spotted" in — or directly down — or slightly out; each side independently of the other.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

dorf-Astoria Hotel to dramatize the important part of synthetic and natural rubber in the war effort. Harvey S. Firestone Jr., president of the company, predicted that synthetic rubber can be made postwar for about 15¢ a pound. Forecasting countless uses for synthetic rubber and plastics after the war, Mr. Firestone said that his company's new plastic, Velon, would be used for a multitude of new and improved products, including hosiery, draperies, upholsteries, and automotive, railway, and theater seat coverings.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has appointed John M. McKibbin as assistant to the vice president. Formerly manager of the company's Application Data & Training Department, Mr. McKibbin will now be responsible for all product and industry advertising, in addition to his present duties.

B. F. Goodrich Co., Louisville, Ky., plant, will be expanded for the increased production of vinyl chloride resins, according to Wm. S. Richardson, general manager of the chemical division of the company at Akron, Ohio. The new facilities are scheduled for completion early in 1945.

Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., has received the National Advertising Agencies Network first award for its employee relations program at a recent conference of the NAAN. The employee relations program covers company publicity and other promotional activities dealing with employee and service-men relations, including *Manhattan Service News*, the company's house organ; War Bond and other drives, victory gardens, Christmas packages to servicemen, safety bulletins, conservation, employee's war exhibits, absenteeism reduction, and other items. This company was awarded second prize for this program last year.

Carbide & Carbon Chemicals Corp., a unit of Union Carbide & Carbon Corp., New York, has made a reduction of 5¢ a pound in the price of certain polyethylene glycols and the "Carbowax" compounds, effective June 15, 1944. The prices for polyethylene glycols 200, 300, 400, and 600, and for "Carbowax" compounds 1000, 1500, 1540, 4000, and 6000 became 30¢ a pound in drum quantities, and 29¢ a pound in carloads or combination carload quantities packed in drums.

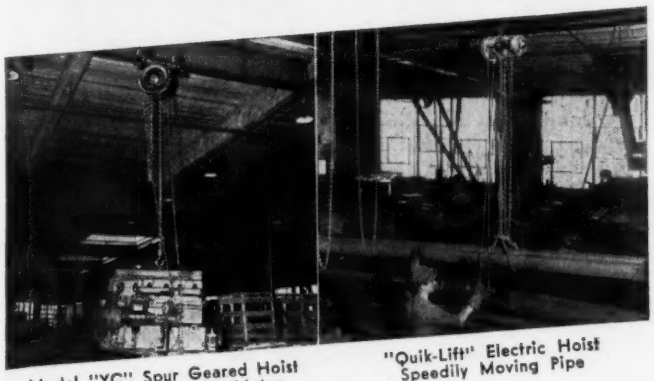
HARRY B. CURTIS, for the last 15 years with Carolina Specialty Co., Charlotte, N. C., who has been appointed district manager of American Monorail Co., with headquarters at 118½ West Fourth St., Charlotte. Mr. Curtis will handle this company's business in North and South Carolina.

Ilg Electric Ventilating Co., Rockford, Ill., has converted its prewar nine-hole short golf course adjoining the plant into storage and distribution space for its equipment destined for war service.

Norma-Hoffmann Bearings Corp., Stamford, Conn. has elected Frederick W. Mesinger a vice president, succeeding H. J. Ritter who recently resigned. Mr. Mesinger takes up his new duties after some 24 years' connection with the firm's engineering staff, being for the last 16 years district manager of the New York office. Norma-Hoffmann has appointed Robert L. Miller, assistant sales manager, to be eastern sales manager; Carl W. Hedler assistant sales manager, to be

THE 16TH NATIONAL EXPOSITION of Power & Mechanical Engineering will be held in Madison Square Garden, New York, Nov. 27 to Dec. 2, 1944. The event will be keyed to the effective solution of continuing war-production problems, particularly those caused by sudden shifts in military needs. It will also provide informational sources for the advancement of postwar planning. Held biennially, the National Power Show, as it is commonly known, is under the sponsorship of an advisory committee, of which I. E. Moultrop, consulting engineer, continues as chairman. Charles F. Roth, president of International Exposition Co., is manager.

COFFING HOISTS



Model "YC" Spur Geared Hoist Moving Large Truck Motor

"Quik-Lift" Electric Hoist Speedily Moving Pipe

FOR SPEED
SAFETY
ECONOMY
DURABILITY

Coffing's "Quik-Lift" Electric and Model "YC" Spur Geared Chain Hoists are made to the same rigid specifications as the famous Coffing "Safety-Pull" Ratchet Lever Hoist. In practically all lines of industry Coffing Hoists are playing a prominent part in speeding up construction, production and maintenance.

Write Today for Catalog JG-6

COFFING HOIST COMPANY
Danville, Illinois, U. S. A.

★ ★

IF it's Construction or Modernization anywhere in the South, let's talk it over.

DC DANIEL CONSTRUCTION CO., INC.
Greenville, S. C. Birmingham, Ala.

★ ★

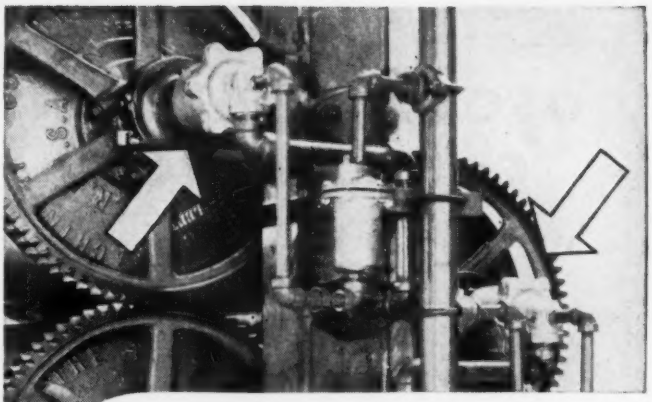
CHAPMAN
STATIC
NEUTRALIZER

Reduces waste and Stabilizes the production rate in many operations

USED ON

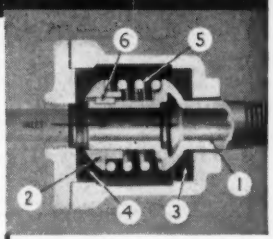
CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES

CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE



HELP for Your "Help Wanted" Problem

. . . Man-Hours Go Farther with JOHNSON JOINTS



● Compared with the Johnson Rotary Pressure Joint, the old stuffing box type of steam fit can be literally a waste of precious time. All the oiling, the repacking, the adjusting, the replacement of parts worn too rapidly by misalignment — all this constant servicing is a thing of the past with Johnson Joints.

For hundreds of users this has made a substantial number of man hours available for other tasks. At the same time the Johnson Joint has stepped up production — by eliminating many causes of machinery shut down, and by providing a simpler way to install modern, more efficient methods of syphon roll drainage.

In normal times, the savings in maintenance cost alone were ample reason for the rapid acceptance that greeted the Johnson Joint. Today, in terms of man hours and plant production, these benefits are of far greater importance. Decide now to investigate Johnson Rotary Pressure Joints for your plant.

WRITE FOR FULL DETAILS

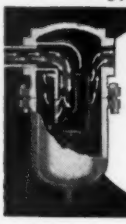
COMPLETELY PACKLESS. Rotating member consists of nipple (1) and sliding collar (2), keyed together (6). Seal is accomplished by carbon graphite ring (3), forced by pressure tightly against nipple.

SELF-OILING. Seal ring and bearing ring (4) are of long-lived carbon graphite—require no lubrication.

SELF-ADJUSTING. Spring (5) is for initial seating only. Joint in operation is pressure sealed; the higher the pressure, the tighter the seal.

SELF-ALIGNING. Ball and socket joints between rotating member and rings provide angular flexibility. Space between nipple and housing allows lateral movement.

The Johnson Corporation
814 WOOD STREET THREE RIVERS, MICH.



MAKE YOUR COMPRESSED AIR COME CLEAN with the Johnson Separator. Employs the two best principles of separation—expansion and change of direction; removes 99% plus of trouble-causing water, dirt and oil from compressed air. Simple design and construction insures long life. Also available for service on steam lines.

Write for Bulletin on Johnson Separation Devices

OSCAR HEINEMAN CORPORATION

Throwsters of Yarns

FOR THE HOSIERY TRADE

Quality Products for Fifty Years

We take pride in the fact that we were pioneers in the practical application of *Avconit in the sizing and processing of high twist Rayon yarns.

It now affords us great pleasure to announce that we are prepared to process Rayon yarns with the new improved *Avconit No. 4, for immediate delivery.

We have been cooperating with the research department of the American Viscose Corporation for weeks in making practical commercial tests, and as a result of these tests we recommend the use of *Avconit No. 4 in the processing of either Viscose, Bemberg or Acetate high twist yarns.

We are changing over our entire production to *Avconit No. 4 as we consider it superior in every way to No. 3.

For best results have your yarns processed by

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123 S. Broad St.
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Greensboro, N. C.

C. D. Gott Co.
3303 Brainerd Rd., Chattanooga, Tenn.

*Trade Mark
American Viscose Corp.

western sales manager, continuing his former duties in charge of distributor sales. Mr. Miller and Mr. Hedler, will report directly to Frederick W. Mesinger.

Procter & Gamble Co., Cincinnati, Ohio, has issued an interesting historical booklet marking its 100th anniversary and the entrance into its second century.

Benjamin Electric Mfg. Co., Des Plaines, Ill.—Birch Addington, field representative, has been elected member of the Georgia Engineering Society.

General Electric Co., Schenectady, N. Y. reports that earnings were less in the first half of 1944 than in the first half of 1943 despite an increase in production for this period to an all-time high. Net sales billed during the first six months this year amounted to $693,070,838, an increase of 11% over same 1943 period. The profit available for dividends for the first six months this year was $20,770,700 compared with $21,061,629, a decline of 1½%.

Federal Electric Products Co., Newark, N. J., has purchased the Electrical Division of Colt's Patent Fire Arms Mfg. Co., Hartford, Conn. To the Federal products covering the field of safety switches, panelboards, and circuit breakers are added now the Colt group of service equipment and load centers, multi-breakers, motor starters and overload relays. The manufacture of Colt products would be continued at Hartford with the same personnel, but under the personal supervision of Thomas M. Cole, executive vice-president of Federal.

Bound Brook Oil-Less Bearing Co., Bound Brook, N. J., has appointed Dominion Bearings Limited, Toronto, Ontario, Canada, as its Canadian representative on Compo oil-retaining porous bronze bearings, Powdiron sintered iron parts and bearings, and Bound Brook graphited bronze bearings.

Pomona Pump Division of Joshua Hendy Iron Works has moved its chief administration offices to Sunnyvale, Calif., for a consolidation with the general administration of the company. Affected by the change are the sales, engineering, purchasing and accounting departments. Among the number of those moving their offices north are Arnold Brown, sales manager; A. W. Moore, advertising manager, and Ralph Linderman, export manager. All manufacturing activities will continue to be carried on in the Southern California plants at Pomona and Torrance, with Charles L. Barrett as plant manager for both.

FREDERIC J. ROBINSON, who has been appointed sales manager for Latin America in the International Division of Sylvania Electric Products Inc., under Walter Coogan, director. The company expects Latin America to become a large postwar market. Before joining Sylvania in 1942, Mr. Robinson was with Gillette Safety Razor Co., for some time as export sales manager for Latin America.

Wickwire Spencer Steel Co., New York, N. Y., has purchased the business and assets of the Sirian Wire & Contact Co., Newark, N. J., forming a new subsidiary company, the Wickwire Spencer Metallurgical Corp., for the purpose. The subsidiary's former name will be dropped. Officers of the Wickwire Spencer Metallurgical Corp. are: president, E. P. Holder; executive vice president, Lt. Col. Cecil P. Young; and treasurer, G. H. Creveling.

Goetze Gasket & Packing Co., Inc., New Brunswick, N. J., has produced and has available for distribution a technical motion picture entitled "Only a Gasket." It is in color, with sound, and commentary by Lowell Thomas. It runs 35 minutes.

AMONG RECENT AWARDS for war work are the following:

Hooker Electrochemical Co., Niagara Falls, N. Y., third star for Army-Navy "E" pennant.

Homestead Valve Mfg. Co., Coraopolis, Pa., third star for Maritime "M" pennant.

General Electric Appliance & Merchandise Department, Bridgeport, Conn., second star in Army-Navy "E" pennant.

INDISPENSABLE

FOR

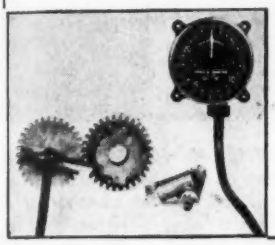
CONTROLLING

AND

INCREASING PRODUCTION

Every textile plant can benefit through the use of Jones Tachometers. Used for checking RPM; provides instantaneous and continuous check on operating speeds of rollers, shafts and other rotating parts; indicates shaft RPM, feet per minute, total output and other essential production information. Allows machines to run at peak productive rate safely. Speeds changeovers to different types of production.

Jones Portable Hand Tachometers are continuous indicating, centrifugal movement, with guaranteed calibration. Lightweight, heavy-duty. Multi-range tachometer complete with 4" extension rod, convex and concave rubber tips, 12" circ. peripheral disc, centerpunch and carrying case . . . $60 FOB Stamford, Conn. Single range portables available in wide variety of ranges. Write for specifications.

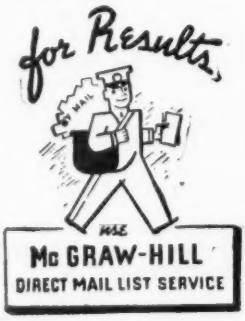


JONES FIXED TEXTILE TACHOMETERS

Jones Fixed Textile Tachometers for permanent installations are continuous indicating over full-scale uniform 360° dial. Heavy duty, wide variety of ranges, and special dial indications. Specifications and prices upon request.

JONES MOTROLA

437 Fairfield Ave., Stamford, Conn.



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McGraw-Hill Industrial Mailing Lists are a direct route to today's purchase-controlling executives and technicians in practically every major industry.

These names are of particular value now when most manufacturers are experiencing constantly increasing difficulty in maintaining their own lists.

Probably no other organization is as well equipped as McGraw-Hill to solve the complicated problem of list maintenance during this period of unparalleled changes in industrial personnel. These lists are compiled from exclusive sources, based on hundreds of thousands of mail questionnaires and the reports of a nation-wide field staff, and are maintained on a twenty-four hour basis.

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. . . and in her heart is a silent pledge to keep everlastingly lovely. For her, and all discriminating women, Fibres and Fabrics—*DuraBeau* treated are her natural choice, because *DuraBeau* Finishes impart the *lasting* charm, beauty and wearability that meet her most exacting requirements.

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Factoring

CAN SOLVE

POST WAR PROBLEMS

Credit checking will become more and more difficult after the war due to changing economic conditions.

Likewise the need for more working capital to increase production and sales in order to meet competition will be necessary.

With ninety years of service to Manufacturers, Merchants and Selling Agents, we offer a plan to relieve credit and financial worries.

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1854 FACTORS 1944

225 Fourth Ave., New York 3, N.Y.

Southern Correspondent: Clarence Knowles

423 Citizens & Southern Nat. Bank Bldg. Atlanta 3, Ga.

NEWS ABOUT *Men*

Lawrence O. Hammett has been elected president and treasurer of Orr Cotton Mills, Inc., Charlotte, N. C., to succeed the late Marshall P. Orr. At the same time, **A. S. Cathcart** was named assistant treasurer; **J. E. Sirrine,** vice-president; **R. W. Sullivan,** secretary; **John A. Lyons,** superintendent, and **Joseph A. Lyons,** assistant superintendent.

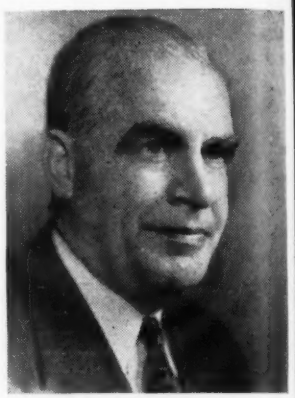
John T. Rodgers, manager of Asheville Hosiery Co., Asheville, N. C., for the last 12 years, has been elected president and treasurer of the company. Other officers elected are: **Edythe V. Rodgers,** vice president and assistant treasurer, and **Robert C. Freeland,** secretary.

Martin B. Foil, of Concord, N. C., on July 1 succeeded **Otho A. Barringer** as directing head of the Tuscarora Cotton Mills, Mount Pleasant, N. C., after having purchased controling interest in the firm. Mr. Barringer retired because of ill health. It is expected that **C. A. Cannon** will continue to serve as president, Mr. Foil being elected secretary-treasurer and **Paul O. Petrea** remaining as office manager. Mr. Foil will continue in his present position with the Cannon Mills, giving only part of his time to the Tuscarora Mills, which has over 8,000 spindles and makes yarns.

Col. Blake Ragsdale Van Leer was inaugurated president of Georgia School of Technology in Atlanta, Ga., July 7, succeeding **Dr. M. L. Brittain** who becomes president emeritus.

Glenn L. Gardiner, for many years with Forstmann Woolen Co., Passaic, N. J., specializing on personnel problems, has been elected vice president for personnel.

George A. Johnson, for 15 years with North American Rayon Corp., Elizabethton, Tenn., has joined the Textile Research Department of American Viscose Corp., Marcus Hook, Pa.



LUTHER H. HODGES, vice-president of Marshall Field & Co., Inc., and general manager of its Manufacturing Division, who has been elected a member of the Board of Directors of Textile Research Institute, Inc., as reported last month. Mr. Hodges has also been elected a member of the executive committee of the institute. He has been a member of the institute's committee on Economic Research. He has also been appointed Director of Primary Products Branch of OPA.

Walter Sherrill has been appointed head of the Knit-Sox plant on Twenty-fifth Street, Hickory, N. C. He succeeds **Van Simpson.**

H. P. Morrison, acting manager of the Harris & Covington Hosiery Mills, High Point, N. C., has been appointed vice-chairman of the concern.

Paul Boehm and **Arthur Archer** have been made vice-presidents of Ames Worsted Co., Lowell, Mass. The former is in charge of piece goods manufacturing and the latter of yarn sales.

Richard C. Remey, purchasing agent and assistant to the president, and **Nathaniel J. Newman,** in charge of sales at the company's finishing plant at Long Island City, N. Y., have been elected vice presidents of Mock, Judson, Voehringer, Inc., Greensboro, N. C. Both have been connected with the company for 15 years.

TRADE MARK REGISTERED
NON-FLUID OIL
U.S. PAT. OFFICE & FOREIGN COUNTRIES

Safeguard Yarn

The economies of Long Draft spinning can be lost if yarn is damaged by dripping, leaking oil. Such oils creep from roll necks to get on leather and cork cots.

Most mills on long draft use NON-FLUID OIL for top and bottom rolls and saddles of spinning frames. It protects yarn and cuts expense by outlasting oil many times over.

New York & New Jersey Lubricant Co.
Main Office: **292 Madison Ave., New York 17, N. Y.**

ALDON SPINNING MILLS
ALFRED W. CAVEDON

Spinners of Fine Woolen
Merino & Specialty Yarns

SELL DIRECT TALCOTTVILLE, CONN.

THOS. WOLSTENHOLME SONS & CO. INC.
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Yarns for all purposes

French and English Spun Worsted
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THE OLDEST AND LARGEST
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In the UNITED STATES
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MAKE STRONGER YARN
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A New Chemical Treatment
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PHILIP C. WENTWORTH, *Treas.*
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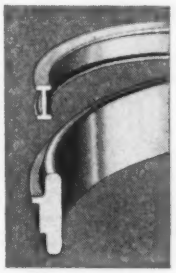
"Our new rings not only improved, but INCREASED production"



New rings are one repair item that constitute a definite step toward getting maximum output from existing equipment. In addition to replacing standard rings, a good many mills are finding it possible to apply our Eadie rings on one or more operations. These increase production substantially over best previous maximum.

WE MAKE ALL TYPES OF HOLDERS

WHITINSVILLE (MASS.)
SPINNING RING CO.
Makers of Spinning and Twister Rings since 1873
DIAMOND FINISH

NAUMKEAG STEAM COTTON CO.

Owners and operators of
PEQUOT MILLS . . . DANVERS BLEACHERY

COMMISSION BLEACHING DYEING AND FINISHING

- Direct dyeing
- Sulphur dyeing
- Vat dyeing
- Fast color Label and Tag Cloths
- Mechanical Fabrics
- Glazed Fabrics

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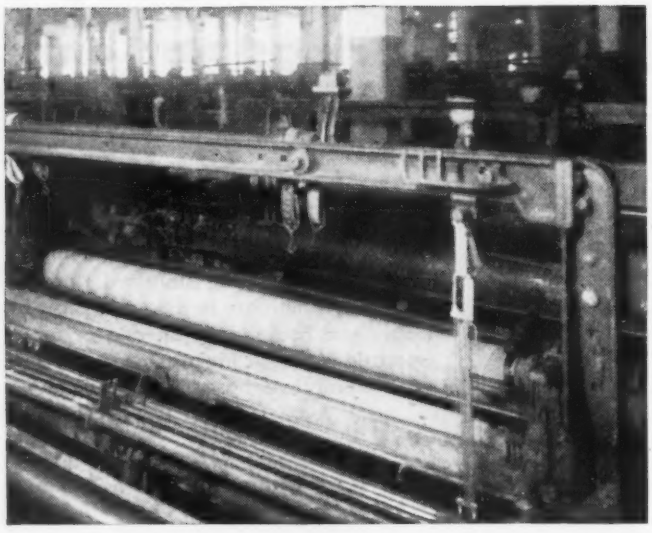
PEQUOT SHEETS AND PILLOW CASES

WHERE PEQUOTS ARE FINISHED

"TEXALOX"
HAS A BETTER GRIPPING ACTION



THERE are plenty of reasons why the increased gripping action of "Texalox" is such a decided advantage.

Faulty fabric due to slippage is so reduced as to be almost negligible.

"Texalox" gets its grip from a surface composed of thousands of uniformly sized, evenly spaced granular projections.

This is a surface which cannot be worn smooth or polished. It has a permanent grip that draws the fibres gently, firmly and without vibration.

There isn't the slightest trace of cut or chafed fibres whether the material is rayon, silk, cotton, wool or jute.

Then too "Texalox" is not affected by moisture, dyes, oils or acids.

Order from your supply dealer. Glad to send you free a "Texalox" roll covering. Write us giving length and diameter of roll and type of fabric you produce. The Carborundum Company, Niagara Falls, N. Y.

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(Manufacturers of "Aloxite" Fillet Cloth—Grinding Wheels—Coated Abrasives)

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NEWS ABOUT MEN

Theodore B. Luce has been elected vice president of Stonecutter Mills Corp., Spindale, N. C. He will serve as vice president in charge of financial arrangements along with **Ivy Cowan,** vice president in charge of manufacturing, and **H. B. Schaeffer,** of New York, vice president in charge of sales. He will make his home in Spindale. He was formerly credit manager with Commercial Factors Corp., New York.

W. W. Sharpe, plant manager of Rufus D. Wilson, Inc., hosiery manufacturers, Burlington, N. C., has been elected vice president.

L. E. Lane has become vice president of Oconee Textile Co., Whitehall, Ga. He was formerly superintendent of Piedmont Cotton Mills, Egan, Ga.

Miss Mary Jane Carlisle has been elected secretary of the Alabama Cotton Manufacturers' Association, succeeding **Ed C. Langham,** who has resigned. Miss Carlisle was graduated from the Lanier High School, Lanier, Ala., and took a secretarial course at Huntingdon College. She had been assistant to Mr. Langham since February of this year.

Mrs. Mildred Gwin Barnwell, executive secretary of the Southern Combed Yarn Spinners Association, Gastonia, N. C., has been appointed cotton textile consultant with the Military Planning and Research Division, Office of The Quartermaster General, U. S. Army. Her work will be directly under **Col. Georges F. Doriot.** Mrs. Barnwell has been granted a leave of absence by the Southern Combed Yarn Spinners Association to render this service. During her absence, the office of the Southern Combed Yarn Spinners Association will carry on its statistical work, and other association matters will be directed by **Caldwell Ragan,** president of the association, and the various committees.

Leslie B. Coombs has been elected principal of the Bradford-Durfee Textile School, Fall River, Mass., to succeed the late Edward V. Carroll. Mr. Coombs has been head of the Chemistry and Dyeing Department at the school since 1934. He holds a Bachelor of Arts degree from Harvard University, a Master of Science degree in chemistry from Harvard's Graduate School of Applied Science, and also specialized in textile chemistry at Massachusetts Institute of Technology.

JOHN L. SEVERANCE, who has been elected secretary of The Association of Cotton Textile Merchants of New York. He comes to the association of which W. Ray Bell is president, from the New York "Journal of Commerce", of which he has been textile editor for several years. He entered the newspaper field in 1922 and after serving with papers in Massachusetts and Connecticut, joined the textile staff of the "Journal of Commerce" in 1928. He took over its raw cotton department in 1931, and succeeded John Murray as textile editor when the latter joined the Cotton Textile Institute several years ago. He is in turn succeeded on the "Journal of Commerce" by Edward P. Tastrom.

Frederick A. Deering, of the gray goods buying division of Pacific Mills, New York, will retire on Oct. 1 after nearly 50 years with that company. In 1895 he joined Lawrence & Co., which sold Pacific goods before that mill established its own sales organization in 1926.

Roy A. Jenkins, plant manager of Grosvenor-Dale Co., Inc., Grosvenor-Dale, Conn., has been elected president of Southern New England Textile Club.

D. S. Ball has accepted the position of treasurer and general manager of Whitney Cotton Mills. He resigned his position as superintendent of Eastern Mfg. Co., Selma, N. C., to accept the new position.

A. C. Lineberger, Jr., of Belmont, N. C., has been elected treasurer, general manager and a director of Rowan Cotton Mills, Salisbury, N. C.

A. L. Gamble, State Labor Commissioner of South Caro-

WHAT PRICE Experience

When you're confronted with seemingly unsolvable spinning and twisting problems, the advice of an experienced ring traveler technician is priceless.

Dary representatives are ring traveler experts, ready and willing to give help whenever and wherever it's needed. Call on the representative nearest you today!

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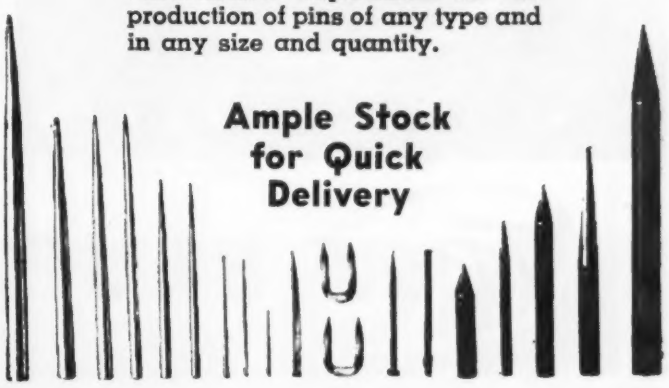
of Uniform Quality

In order to insure pins of uniform quality, we have installed a completely new HARDENING and TEMPERING Department for the production of pins of any type and in any size and quantity.

Ample Stock for Quick Delivery



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Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

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For the duration, our shops are principally engaged on war work.

We are doing our utmost, by extra effort and careful planning, to deliver essential supplies for repairs and maintenance.

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Two exclusive Features Affording Long Life:

1. Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.
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We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins.

Holders for all types of mules, frames, twisters, and winders.

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Helpful in the preparation of *true blue* Azo dyes for Navy Blue is SOLVAY Sodium Nitrite. This pure, free-flowing crystal is especially suited for manufacturing dyes and for textile dyeing. For dyes that won't die—specify SOLVAY Sodium Nitrite—and be sure of highest quality!

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SODIUM NITRITE

lina, has been appointed to the American Standard Association's textile safety code committee.

Hans W. Nolde, secretary-treasurer of Nolde & Horst Co., Reading, Pa., has been appointed special consultant on hosiery to the Consumer Goods Division, OPA, Washington, D. C.

William Shepherdson has been appointed staff director of the recently organized Post-War Small Business Credit Commission of the American Bankers Association. Mr. Shepherdson has been chief of the Small Business Unit of the Bureau of Foreign & Domestic Commerce, U. S. Department of Commerce, since December, 1941.

David S. Klein, manager of Industrial Rayon Corp's. Philadelphia sales office since 1938, has moved his offices to the company's general sales offices in New York, where he will continue to handle accounts previously served through Philadelphia. He is assuming additional responsibilities in connection with other eastern accounts.

Robert E. Davis, who has been associated with Newnan Cotton Mills, Newnan, Ga., has been appointed manager of the New York office.

Howard S. Jacobson has joined the staff of Native Laces & Textiles, Inc., New York, as comptroller, and as assistant to **J. S. Lawrence,** treasurer. Mr. Jacobson will assume responsibility over all accounting throughout the company and its mills. Mr. Jacobson has been associated with the Manufacturing Division of Marshall Field & Co., for the past nine years.

James G. Dixon, who has been head of the designing and laboratory departments of Brookside Mills, Knoxville, Tenn., has resigned to accept a position as stylist for Soule Mills, New Bedford, Mass.

William L. Meyer, office manager, and **C. Frank Balzer,** of the cashier's department of the New York office of American Viscose Corp., have completed 25 years of service with the company and were honored recently at an informal ceremony held in the Empire State Club, New York.

Elmer P. Wright has been

RUTH LLOYD WILLETT, age 15, of Gulfport, Miss., winner of the national cotton essay contest, pictured while visiting the New York Cotton Exchange, where members ceased active trading to applaud her as she mounted the rostrum. Miss Willett's essay entitled "Cotton Goes to War" won in a field of more than 500,000 high school students from 16 cotton states who competed for $15,500 in prizes and the first prize trip to New York as guest of the New York Cotton Exchange.

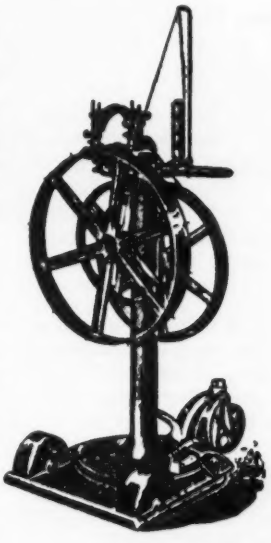
director of industrial relations, Naumkeag Steam Cotton Co., Salem, Mass. He joined the Naumkeag organization in the capacity of industrial engineer in 1940 and later was promoted to superintendent of the Danvers Bleachery. He is succeeded by **Warren E. Baker** at Danvers.

John E. Rousmaniere, formerly president of Cabot Mfg. Co. and now a director of American Woolen Co.; **Henry C. Breck,** a partner of J. & W. Seligman; and **Robert Strickland,** president of Trust Co. of Georgia, have been elected directors of Tubize Rayon Corp., New York, following the resignations of **Rufus W. Scott,** chairman of the board and chairman of the executive committee, **John Wyckoff Mettler,** president of the Interwoven Stocking Co. and **Charles W. McConaughy** of the law firm of Cadwallader, Wickersham & Taft, counsel for Tubize.

Raymond K. Flege has recently been appointed director of research for North Star Woolen Mill Co., of Minneapolis, and Lima Woolen Mills Co., of Lima, Ohio.

James L. McKittrick has be-

A Jack-of-all-Sewing For Finishing



The Dinsmore No. 9 Portable Rotary Foot Power Sewing Machine is used for handling cloth, thick or thin, wet or dry. Easily shifted to any part of the mill. Positive-acting . . . all gears have machine cut teeth . . . our Improved "DN" Sewing Head is standard equipment. Rubber tire floor wheels. ***Write us.***

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See Also Textile World Year Book and Catalog

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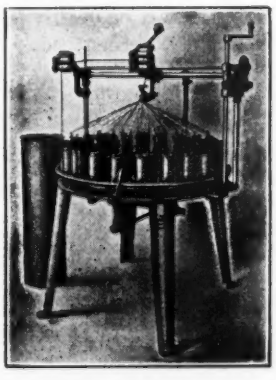
THE NEW ENGLAND BUTT COMPANY ANNOUNCES A NEW 1944 CATALOG, containing valuable information on braiding elastic, shoe and corset laces, awning braids, lingerie braids, tapes, fish lines, cords, and special braids. This catalog will be sent you on request.



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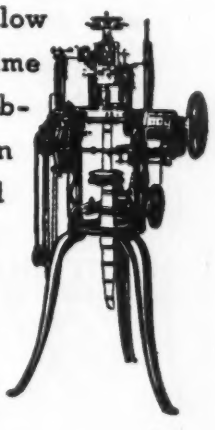
IN TIME OF WAR

PREPARE FOR Peace

WE are here to supply what the country needs most—in War, or in Peace. • Right now —Uncle Sam says— "Build for War". When he says— "Build for Peace" – Brinton will follow the command. • In the meantime think about your Peace Problems and in terms of Brinton Knitting Machines. • We shall be glad to figure with you now, for peace-time requirements.



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Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

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NEWS ABOUT MEN

come personnel director of Excelsior Mills, Union, S. C. He was recently honorably discharged from the Army Air Corps.

Chester H. Boyce has been named general manager of Verney Brunswick Mills, Inc., Brunswick, Me. **John F. Faust** has been named superintendent, and **Edward Friar, Jr.**, assistant superintendent. **Albert J. Owler,** formerly general manager, is now executive vice president. The changes noted are a series of promotions.

Wm. H. Grenshaw is now acting manager of Aberfoyle Mfg. Co., Belmont, N. C., after representing the company in the two Carolinas for the last 10 years. Cosby & Thomas, Charlotte, N. C., has been appointed company representatives in the territory formerly held by Mr. Grenshaw.

W. E. Mitchell, general manager of Melrose Hosiery Co., High Point, N. C., has been named chairman of the Veterans' Advisory Council in High Point, an organization of civic and service clubs, which is designed to work with the U. S. Employment Service and the veterans' reemployment committees of the two selective service replacement committees. The vice chairman is **H. P. Morrison,** acting manager of Harriss & Covington Hosiery Mills.

Fred L. Still, formerly of Rock Hill, S. C., where he was connected with the Aragon Mills, but more recently associated with Stonewall Cotton Mills, Stonewall, Miss., has accepted the position of general manager of Cutter Mfg. Co., Rock Hill. Mr. Still succeeded the late T. Fred Bell, who died several months ago, and who was manager of the Cutter company for some time prior to his death.

Robert F. Smith has resigned his position with Carlton Yarn Mills, Cherryville, N. C., and accepted position of production manager of a rayon plant operated at Jewett City, Conn., by Ashland Corp.

L. Lewis has become agent of Lawrence Blanket Co., Webster, Mass. He was formerly with Gilsum Woolen Co., Gilsum, N. H.

Milton Dean has retired as agent of Edwards Mfg. Co., Augusta, Maine.

D. F. Williamson is the new manager of Lavonia Mfg. Co., Lavonia, Ga. He was formerly associated with Shuford textile mills in Hickory and Granite Falls, N. C.

T. B. Reynolds, of White Hall, Ga., has been named superintendent of Eastern Mfg. Co., Selma, N. C., succeeding **David S. Ball,** who resigned to become general manager and treasurer of Whitley Cotton Mills, Clayton, N. C.

John R. B. Hawes is the new manager of the Icard Cordage Co., Icard, N. C., succeeding **R. H. Singleton.**

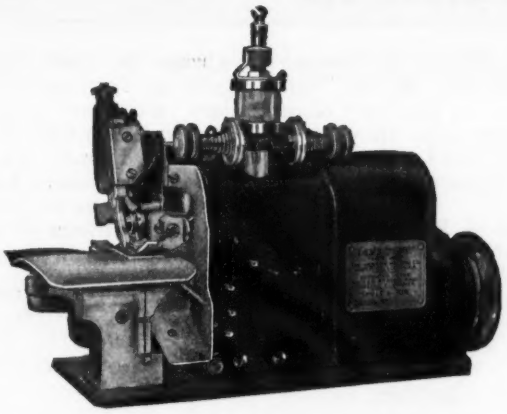
Everett F. Syms, formerly assistant manager of Spray Mills, N. C., has been named general manager of Atlanta Woolen Mills, Atlanta, Ga.

James Low has been made manager of Asbestos Textile Co., North Brookfield, Mass., subsidiary of Garke Corp., Chicago. He was superintendent for 12 years at Ludlow Mfg. Co., but recently had been personnel manager of Perkins Machine & Gear Co., West Springfield, Mass.

J. M. Halpren has been named general merchandise manager for the L. Hammel Dry Goods Co., Mobile, Ala. For the last eleven years he has served as general manager for the Luxite Underwear Division of the Holeproof Hosiery Co.

Horace L. Pratt has been made laboratory director of Mt. Vernon-Woodberry Mills, Inc., Columbia, S. C. He is succeeded by **Thomas Porter** as overseer of beaming. **Lonnie Price** is now assistant to overseer of twisting on the second shift; **W. W. Hutchinson,** second hand in weaving on the second shift; **Otis Wessinger,** second hand in weaving on the third shift, and **C. W. Medlen,** second hand in beaming on the third shift.

H. F. Hogue, for many years superintendent of the two plants of American Yarn & Processing Co., Whitnel, N. C., has been named superintendent of Trenton Mills, Gastonia, N. C., succeeding **S. M. Cauble,** who resigned recently to become superintendent of the Acme Spinning Co., Belmont, N. C. Mr. Hogue is a native of Clover, S. C., where he was connected with the Hampton Mills for several years.



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OVEREDGING, OVERSEAMING AND HEMMING MACHINES

Produce Federal Specification Stitch
Types 501, 502, 503, 504 and 505

WAR WORK DEMANDS

Quality Results—High Production
Convenient Handling
Minimum Time-Out for Adjustment
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Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various War Work and Proper Care and Operation of Machine.

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KNITTING MACHINES

meet the need for Speed—
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CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

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Spring Latch Needle
KNITTING MACHINERY

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

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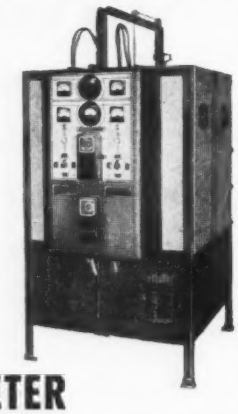
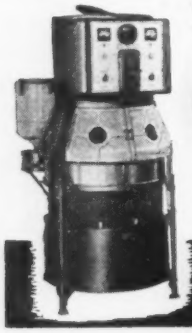
TEST TEXTILES for WEATHERING and FADING in the

ATLAS TWIN ARC WEATHER-OMETER

Faithfully duplicates the combined weathering effects of sunlight, rain, and heavy dew; accelerated to reduce years of actual weathering to a few days' testing. All weather cycles automatically controlled for continuous operation without attention.

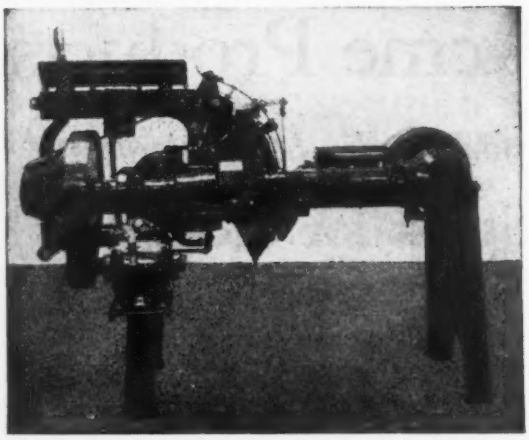




ATLAS FADE-OMETER

The recognized standard testing machine in the textile field for determining the fastness to light of dyestuffs and fabrics. Fully automatic in operation.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St., Chicago 10, Ill.
Weather-Ometer • Launder-Ometer • Fade-Ometer



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HIGH CLEANING CAPACITY
Protects barrel and finish. Usually pays for itself in one year—always within 18 months.

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James F. Notman . . . . . Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penna., N. J. and N. Y.
Geo. Thomas & Co. . . Manchester, England—European Agt.

S. L. Bolton has become superintendent of the Norwood, N. C., plant of Collins & Aikman Corp. He was formerly associated with Alabama Mills, Dadeville.

Roscoe O. Roberts, formerly superintendent of Lincoln Mills of Alabama, Huntsville, has become superintendent of the Augusta (Ga.) plant of the John P. King Mfg. Co.

A. C. Clodfelter has accepted the position of night superintendent of Gem Yarn Mills, Cornelius, N. C. He was formerly head of carding and spinning at the Amazon Cotton Mills, Thomasville, N. C.

John McDaniel has become superintendent of weaving at Pacolet Mfg. Co., Gainesville, Ga. He was formerly with American Spinning Co., Greenville, S. C.

J. N. Rumph, who has been assistant overseer of the dressing department at Muscogee Mfg. Co., Columbus, Ga., has been promoted to overseer, succeeding **Charles S. Schofield,** who has resigned.

John Strater has resigned his position with Roanoke Mills, Roanoke Rapids, N. C., and has become night superintendent of carding and spinning at American Yarn & Processing Co., Nelson Plants, Nos. 1 and 2, Whitnel, N. C.

George N. Miller has resigned as superintendent of power and construction at Riverside & Dan River Cotton Mills, Inc., Danville, Va., and has been succeeded by **Richard Spessard,** engineer for the company, who has been promoted to his new position.

Richard Finger has resigned as principal of the Mt. View School, Newton, N. C., to accept a position with Burlington Mills.

Alfred Guidotti has been made superintendent of Gordon Woolen Mills, Inc., of Newport, N. H. He was formerly at Atlanta Woolen Mills, Atlanta, Ga.

L. R. Pittenger, Sr., has resigned his position as overseer of the Bevelle Plant cardroom, and is now foreman in picker room, of the Lanett Mill, Lanett, Ala. Mr. Pittenger had been employed 22 years at the Bevelle Plant of Avondale Mills of Alabama, during the last two years as cardroom overseer.

T. B. Reynolds has resigned as superintendent of Oconee Textile Co., Whitehall, Ga., and has succeeded **David S. Ball** as superintendent of Eastern Mfg. Co., Selma, N. C.

J. D. Burton, formerly with the Pelzer Mills, Pelzer, S. C., has become associated with Excelsior Mills, No. 2, Clemson, S. C.

Men in Armed Services

Albert J. Armstrong, of A. J. Armstrong & Co., New York, has been commissioned second lieutenant in Army QM Corps. He is now in New Guinea, and has been in the service over two years.

DeWitt Thompson, formerly assistant general manager of sales for Mathieson Alkali Works, New York, has been promoted to lieutenant commander in the Navy.

William Dribben, on leave from Cone Export & Commission Co., New York, has been promoted to lieutenant colonel. He is overseas.

C. P. Eldred in the New York office of Bemis Bros. Bag Co., for three years, has been commissioned lieutenant (j.g.) in the Navy.

E. A. Quintard, formerly assistant superintendent of Swift Mfg. Co., Columbus, Ga., now on leave for the duration, has been promoted to the rank of major in the Army Air Forces. Following a number of months in the South Pacific as a bomber navigator, he is now stationed at Dyersburg, Tenn.

Daniel J. Stowe, prior to entering the armed service, secretary and assistant treasurer of the Stowe Mills, Inc., McAdenville, N. C., has been promoted to lieutenant (sg) in the United States Naval Reserve.

James A. Sherer, secretary and treasurer of Spindale Mills, Spindale, N. C., now on leave, has joined the U. S. Naval Reserve.

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

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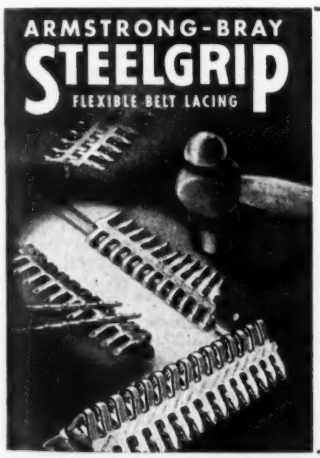
Complete color assortments

American Woolen Company

225 Fourth Avenue **New York**



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Flexible Belt Lacing

11 sizes boxed or in long lengths for wide conveyor belts. Best for rubber and fabric belts because it compresses belt ends and prevents fraying. Applied in a few minutes with a hammer. 2-piece hinged rocker pins. Also, WIREGRIP Belt Hooks that fit any lacing machine. Immediate delivery on both types.

Write for Circulars

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THE LOYAL T. **IVES** COMPANY
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SPRING BEARD KNITTING NEEDLES

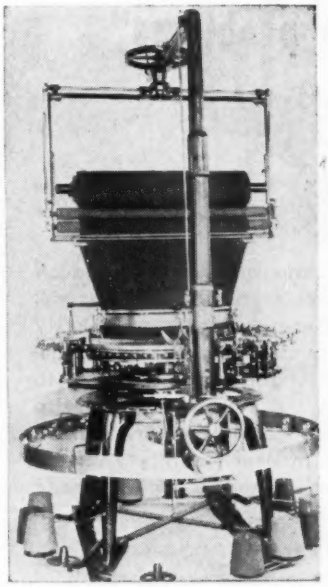
For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

Gain Production

With These Two NEW Knitting Machines



Model S-1
Single Head Spring Needle Knitting Machine

Designed for overcoating and heavy cloths, but will run the finest underwear just as easily. Gives greater production, at lower costs, and better fabrics.

Revolutionary design has been achieved in some features of these machines. For instance: The B-15 has automatic adjustment of jacks—

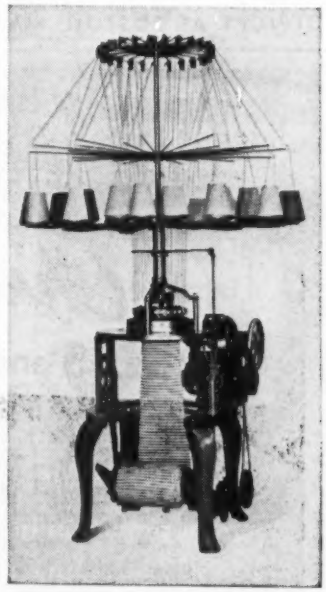
NO JACK RING
NO JACK CAM RING

This eliminates the old trouble of plugging up the space between rings.

WRITE FOR THE FULL DETAILS

Backed by Nearly 100 Years of Experience

Both these machines are simplified in scientific design throughout—to assure you new results in low-cost production, clean operation, steady performance and a richer, finer quality fabric. Let us outline to you the full scope of their production in a variety of fabrics.



New Model B-15
Multiple Feed Latch Needle Knitting Machine

For straight high production of standard cloth at lowest possible cost under continuous operations. A bread and butter producer.

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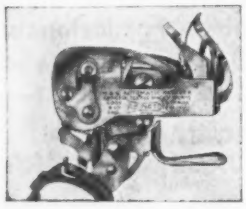
"This Knotter boosts production and solves trainee problems"

The Abington Knotter ties a weaver's knot with such automatic precision that trainees are equal to old hands. Furthermore, it automatically scissor clips the tails to any desired length from ¼" down to minus 1/16". Knots are non-slip and compact, superior to hand knots in dependability and uniformity. Handles a great range of numbers.



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ABINGTON TEXTILE MCHY. WKS., ABINGTON, MASS.
Vacuum Card Strippers – Yarn Dyeing Systems – Weaver's Knotters
OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.

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HARNESS and JACK STRAPS

Whether fabric or leather, Champion precision quality means built to *your* specifications down to the most minute detail—and made from mill tested TON-TEX fabric, or the finest quality leathers that the market affords the experienced buyer.

W. D. DODENHOFF COMPANY
INCORPORATED
GREENVILLE, SOUTH CAROLINA

NEWS ABOUT MEN

Col. Arthur H. Rogow, QMC, has been appointed Director of Procurement at the Jersey City Quartermaster Depot. Colonel Rogow replaces **Lt. Col. James V. Demarest,** QMC, who has been assigned the post of Depot Inspector.

Morton L. Church, Jr., son of the Charlotte, N. C., representative of the Catlin Yarn Co., has been promoted to the rank of first lieutenant at Foster Field, Tex., where he is an instrument flight instructor.

John B. Gaither, assistant production manager for Proximity Mfg. Co., Greensboro, N. C., before entering the army, has been promoted to the rank of major at Army Quartermaster Depot, Jersey City, N. J.

Wm. Henry Parker, prior to entering the army, a member of the New York sales office of Riverside & Dan River Cotton Mills, Inc., Danville, Va., has been promoted to the rank of captain in Army Air Forces and is stationed at Morris Field, Charlotte, N. C.

Ben G. Rose, of Candler, N. C., who, prior to entering the Army in May 1942, was employed as a research chemist by the American Enka Corp., has been promoted to the rank of captain in England where he is stationed with the Army Air Forces.

Robert P. Walker, a cost accountant for Marshall Field & Co., Spray, N. C., before going into the U. S. Army, is now a technician fifth grade at the Army base near Opelika, Ala.

Daniel Talbot Waynick, of Greensboro, N. C., an engineer for Burlington Mills Corp., has just been commissioned an ensign in the U. S. Naval Reserve, and has reported to the Naval indoctrination school at Princeton University.

Obituary

Marshall Pinckney Orr, 58, president and treasurer of Orr Cotton Mills, Anderson, S. C., and former president of the South Carolina Manufacturers' Association, died at his home in Anderson July 17. Widely known in southern textile circles, Mr. Orr was also connected with the Chiquola Mfg. Co., Honea Path; Duncan Cotton Mills, Greenville, and Union Bleachery, also of Greenville. He was a former president of the Print Cloth Group, and an officer of the Cotton-Textile Institute and the American Cotton Manufacturers' Association.

George Russell Stearns, 84, who established and was president of Riverside Mills, Inc., Augusta, Ga., died recently.

Frank G. Hall, 73, president of Stein-Hall & Co., New York, makers of vegetable adhesives and importers of raw materials, died July 31. A pioneer in the development of industrial uses of starch, he was associated with the company for over 50 years, joining it in 1891. In 1918 the company, formerly Stein-Hirsh & Co., became Stein-Hall & Co. with Mr. Hall as president. He was also president of the Tapioca Products Association.

Edgar H. Bristol, 73, president of The Foxboro Co., Foxboro, Mass., and one of its founders, died on July 24, at his summer home at Falmouth Heights, Mass. With his brother, Bennet B. Bristol, he organized the Industrial Instrument Co., in 1908, which, in 1914, became The Foxboro Co. Mr. Bristol served as president from the start.

Robert Emmett Ligon, 76, formerly vice-president of Gluck Mills, Anderson, S. C., died July 29. At the time of his death Mr. Ligon was president of the Perpetual Building & Loan Association.

Dr. Frank Jerome Tone, 75, chairman of the board of Carborundum Co., Niagara Falls, New York, died July 26.

Edmund H. Lunken, 83, chairman of the board of Lunkenheimer Co., Cincinnati, Ohio, died July 19.

Edward Bausch, 89, chairman of the board of Bausch & Lomb Optical Co., Rochester, N. Y., died July 30.

Franklin M. Ward, 91, former operator of Southern Spindle & Flyer Co., Charlotte, N. C., died last month.

Jena Cuthbert Collier, 76,

NEWS FOR TEXTILE PRINTERS

Using Water Soluble Paste Pigments

Continuous Runs of 15,000 Yds. to 33,000 Yds. Now Possible

Heretofore, in the printing of textiles, it has been necessary to stop the machine every 2400 to 3000 yards, to clean pigments from the doctor blades.

Lubricant D-6 Concentrate

lubricates and distributes the pigments so thoroughly and evenly that such frequent stops are no longer necessary. The minimum continuous yardage that has been run, using this lubricant, is 15,000 while the maximum is 33,000. Result — increased printing production and reduced maintenance cost.

Originally developed for one of America's leading textile printers, Lubricant D-6 Concentrate is now offered to the printing industry as a tried and proved product, — already used on well over a million yards.

Write for Bulletin TW.

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MERCHANTS AND DISTRIBUTORS
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Dependable, speedy and economical de-sizing . . . Our technical staff always at your service.

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For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

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ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI • JERSEY CITY • LOCKPORT, N. Y.
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and DRYING
MACHINERY

How DEVOPAKE hides and covers *any* surface *in just one coat!*

You maintenance men, master painters and purchasing agents will shout "wonderful" (as have thousands before you) when you see how DEVOPAKE saves time, money and man hours. Here's a self-sealer and finish coat in one with an oil base that makes it really *wear!* DEVOPAKE covers more surface per gallon . . . hides solidly . . . covers most *any* interior wall surface in *just one coat.* Next job . . . specify DEVOPAKE. We'll guarantee satisfaction. If your agent is temporarily out of this fast selling Devoe product, remember . . . Uncle Sam needs it too.

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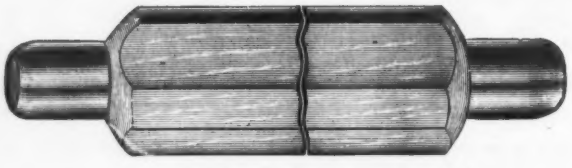

DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write.

FRANK BAILEY Cedar Brook, N. J.

CAMERON MACHINE COMPANY, 61 Poplar Street, Brooklyn 2, New York
MIDWEST OFFICE: Harris Trust Building, 111 West Monroe Street, Chicago 3

who organized Oxford Knitting Mills, later Collier Mills, Inc., of Barnesville, Ga., said to be the first knitting mill in the South, died June 23. He was a former state senator and mayor of Barnesville.

Harry D. Mitchell, 56, manager of Link-Belt Co.'s reducer and P.I.V. gear sales, Philadelphia, Pa., died July 3. He was with Link-Belt since 1906, specializing on drives in textile mills.

Wm. Beswick, 66, assistant to the president of Alabama Mills, Inc., Birmingham, Ala., died recently at Montgomery, Ala.

Frank M. Beasley, for several years resident manager of Sawyer Mills, Dover, N. H., died in Old Town, Me., July 13.

Theodore Halkias, 56, part owner of the Mercury Rug Co., Reading, Pa., died July 19.

John Skottowe Wannamaker, 74, president of the American Cotton Association, died at the Tri-County hospital in Orangeburg, S. C., July 7. He had large cotton interests at St. Matthews, S. C.

John B. Rich, 57, Woolrich, Pa., secretary and director of Woolrich Woolen Mills, Woolrich, Pa., died July 28.

Louis Kampf, 63, for many years a prominent textile engineer, died at Salem, Mass., on June 29. He went to China in 1920, supervised the building of a cotton mill in that country, and later served in Manchuria as general manager for Anderson-Myer & Co., importers and exporters. He was identified with the construction of the Pequot Mills after the Salem fire in 1914.

Charles Marvin Bagwell, 68, Winston-Salem, N. C., for the last 25 years private secretary to the president of P. H. Hanes Knitting Co., died in that city July 21.

Josiah P. Jenness, former agent for American Woolen Co. at its Sawyer branch in Dover, N. H., is dead.

Frederick W. Schmidt, 44, office manager of the Fedden Bros. Hosiery Co., Inc., Shillington, Pa., died July 20.

John B. Stetson, 36, grandson of the founder of John B. Stetson Co., hat manufacturers, Philadelphia, Pa., died July 18 at the Walter Reed Hospital after an illness of several months. Major Stetson was an artillery officer at Fort Huachuca, Arizona.

Arthur Stringer, 61, personnel director of Chicopee Mfg. Co., Gainesville, Ga., died recently.

T. V. Ellis, 50, secretary and assistant treasurer of Clinchfield Mfg. Co., Marion, N. C., died recently. He was connected with the company for 25 years.

Evans H. Cox, 52, manager of the Charlotte, N. C., branch of Westinghouse Electric & Mfg. Co., died recently.

Wm. C. Deininger, 59, for about 25 years co-manager of the Charlotte, N. C., division of New England Waste Co., died recently.

James D. Ezelle, 74, of Burlington, N. C., who was superintendent of the Holt, Gant & Holt Cotton Mfg. Co., Altamahaw, N. C., for 20 years and served as superintendent of several other mills in Alamance County at various times during his career, died July 25.

Fred M. White, 45, superintendent of Pasquotank Hosiery Mills, Elizabeth City, N. C., died July 24. He had been connected with the mill for 25 years.

C. D. Howard, 35, since 1941 superintendent of Wadesboro Full Fashioned Hosiery Mills, Wadesboro, N. C., and prior to that with Burlington Mills Corp., Burlington, N. C., died July 14.

Robert L. S. Armitage, 60, for many years a foreman at the Berkshire Knitting Mills, Reading, Pa., died recently.

C. S. Cozart, 62, for 13 years superintendent of twisting at Edenton Cotton Mills, Edenton, N. C., died recently.

Irvin N. Smith, 63, superintendent at Textile Machine Works, Reading, Pa., died July 6.

Alta E. Bickford, 72, an overseer for many years at the Cocheco branch of Pacific Mills, Dover, N. H., died in that city, June 30.

Thomas C. Leroy Lanier, 66, overseer for National Yarn Mills, Inc., East Belmont, N. C., until he retired due to ill health, died at Belmont July 3.

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Moisture
CONTROL
Will save you money
It is Quick and Accurate

For testing raw stock, cotton, wool, silk, rayon, yard goods, etc.

ANY-ONE CAN OPERATE IT

● The Dietert moisture control units are inexpensive moisture testers. They assure savings in processing time, reduce rejections and improve product quality. Successfully used by many industries.

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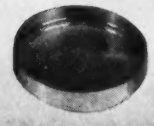

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Where Ordinary Woods Deteriorate, Use
Tidewater
RED CYPRESS

THE high humidity constantly present in your production operations is fatal to ordinary woods, which quickly deteriorate under such extreme conditions. The use of the Heartwood of Tidewater Red Cypress, however, has proved itself practical and desirable. This Tidewater Red Cypress Heartwood withstands abuses to a remarkable extent and is, in fact, classified in the "Wood Handbook" of the U. S. Department of Agriculture as a species "durable even when used under conditions that favor decay."

Write today for full information about TIDEWATER Red Cypress.

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RED CYPRESS "The Wood Eternal"

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WE'VE LEARNED A LOT IN OUR 50 YEARS!

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

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ALL SIZES FOR ALL PURPOSES
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ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.
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RED-RAY RADIANT HEAT BURNERS SPEED UP DRYING OF THICK FELTED GOODS

A single 119 inch Red-Ray Burner applied to cans for drying inch thick felted material. Drying speed increased 60 per cent.

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Odell Supply Co. . . . . Greensboro, N. C.
American Supply Co. . . . . Providence, R. I.
Hendrik VanBrederode . . . . Midland Park, N. J.
Matthews Equipment Co. . . . Providence 3, R. I.
R. D. Hughes Sales Co. . . . . Dallas, Texas

NOVELTY-YARNS
For
WEAVERS-KNITTERS

MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

NEWS ABOUT Mills

Cotton Mill News

Alba Twine Mills, Inc., Mariposa, N. C., has been sold to M. M. Rudisill, of Lincolnton, N. C., who will operate the mill under the name of Alba Mills. The mill is equipped with 1,540 spindles for the manufacture of seine twine as well as coarse yarns. During the last 12 years R. F. Craig has been president of these mills, with H. M. Craig, secretary, and A. C. Taylor, vice president and assistant treasurer and general manager. R. F. Craig has retired from business; H. M. Craig will continue as secretary-treasurer of the Lola Mills and the Gaston County Dyeing Machine Co. A. C. Taylor has made no announcement of his plans.

Aldora Mills, Barnesville, Ga., sustained a fire loss in twister room. An official estimate of damage has not been announced. The loss will be replaced.

Anniston Mfg. Co., Anniston, Ala., has work under way on new addition to mill, for which general contract recently was let to Daniel Construction Co., Greenville, S. C. Cost reported over $85,000, with equipment. J. E. Sirrine & Co., Greenville, are architects and engineers.

Brodnax Cotton Mills, Brodnax, Va., (previously reported) have completed rebuilding of portion of mill damaged by fire last September, and operations are being resumed at capacity.

Crown Mfg. Co., Pawtucket, R. I.—Control of this company has been purchased by Jacob Ziskind, Fall River, Mass., textile mill operator, who will maintain production at mill as heretofore under same name. Mr. Ziskind has become president, succeeding E. Kent Swift. Plant comprises 60,000 spindles. Price is reported as $235 per share.

Fruit of the Loom Corp., Providence, R. I., has been incorporated under state laws to take over and operate Fruit of the Loom, Inc., with mill at Pontiac, R. I. Incorporators include Robert L. Anthony, Ernest A. Jenckes, and S. D. Gardiner.

Gosnold Mills Corp., New Bedford, Mass., has been acquired by Powdrell & Alexander, Inc., which will take over property at once. It is proposed to continue operations at plant. Purchase price was about $1,750,000. J. W. Powdrell is president and Allan Barrows vice president and treasurer.

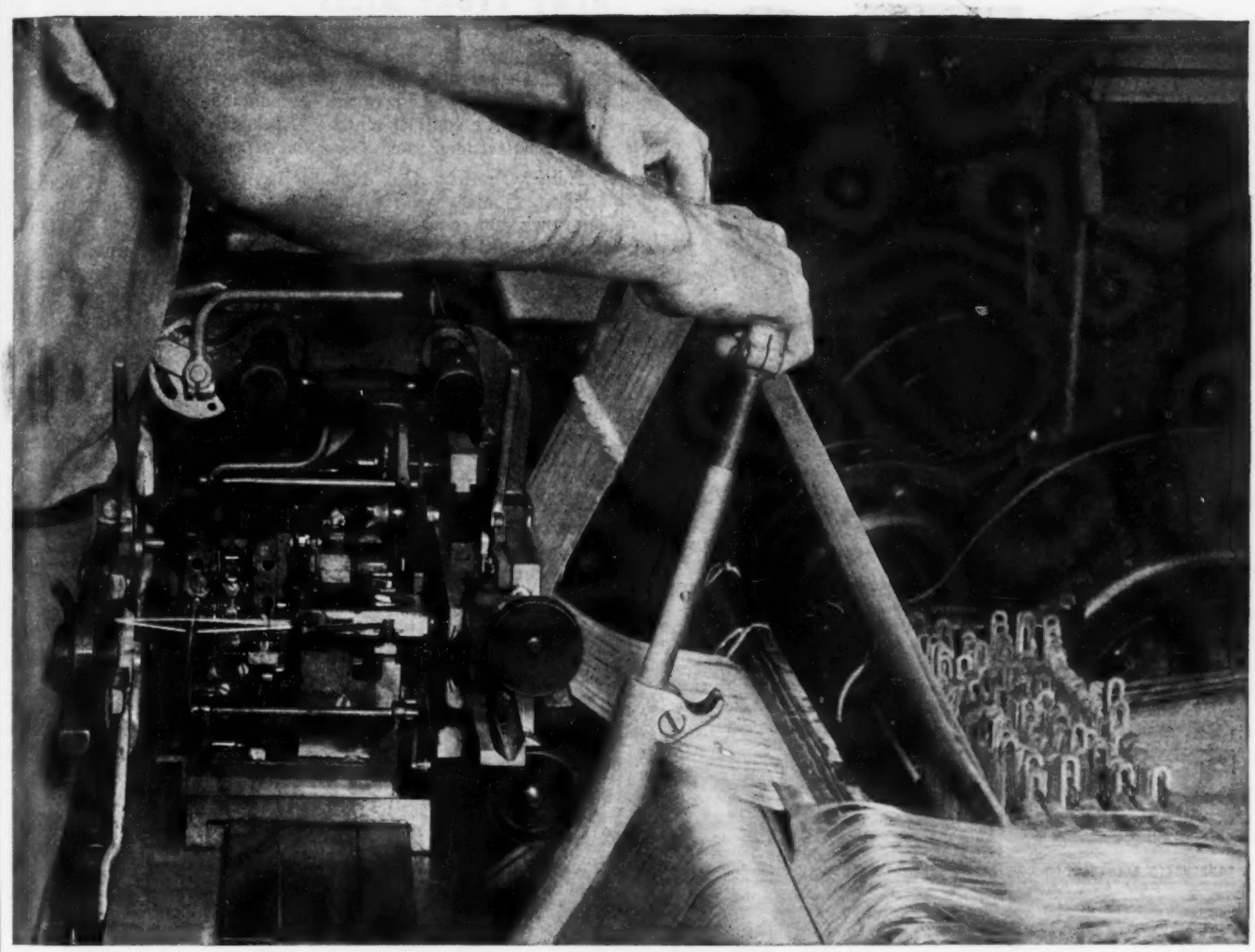
Hope Mill, Hope, R. I., has been sold by the Lonsdale Co. to F. Jacobson & Sons, New York shirt manufacturers. The new owners will use the products of the mill for their own business, it is stated. The mill has 800 looms and 33,000 spindles, on the production of carded cotton fabrics.

Inverness Mills, Winston-Salem, N. C., has been purchased by the Bassick Co., Bridgeport, Conn.

Maverick Mills, East Boston, Mass., has made alterations to a manufacturing building at Addison and Maverick streets from plans by J. McElroy, East Boston architect. Tredennick Billings Co., Boston contractors, did the work.

Necessities, Ltd., Greenville, S. C., newly organized for the production of cotton goods, began operations early in August, 1914. The principal product will be compressed sanitary napkins, with other facilities devoted to the manufacture of baby and surgical items. Wm. D. Young, formerly an officer of Convenience, Inc., has formed, with his family, a limited partnership with working capital of $100,000. The new concern is housed in a two-story building with floor space of 26,000 sq. ft.

Opelika Mills, Opelika, Ala., officials, are considering plans for the erection of a large addition which will represent a cost of over $900,000, includ-



Rayon Warp-Tying, by Portable Machine

RAYON warp can be replenished *at the loom* by using a Barber-Colman Model "LS" Portable Warp Tying Machine. This machine is compactly designed so it will work directly back of the loom in alleys as narrow as 12". It is light and sturdily built and can be easily and quickly moved from one location to another. It is hand-operated and ties-in the warp in sections, each section or load being approximately 15" wide. The knotting mechanism, which includes a "stumbler" to eliminate missing any ends, is normally operated at about 300 knots a minute. Since the machine will handle as fine as 40 denier yarn, all parts are precision made to extremely close standards and fully interchangeable. A good operator can be trained in a short time, requiring principally the ability to be careful and pay attention to significant detail. The picture shows one load being completed, the operator making an inspection of the uniform row of knots before clearing the machine for the next load. Bulletin F-1256-4, which will be sent promptly on request, will describe this machine to you in greater detail.

For Example . . .

From our field records, we cite this experience of a rayon goods manufacturer working 100% on war material:

Yarn Counts	75 to 150 denier rayon
No. of Ends	2500 to 10,000
Knots Tied per Hour	4000 to 8500
Sley	56 to 280

Comparison of loom hours lost per week due to stoppage for replenishment of warp:

Before installing warp tying machine	325
After installing warp tying machine	50
Loom Hours Saved per Week	275

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

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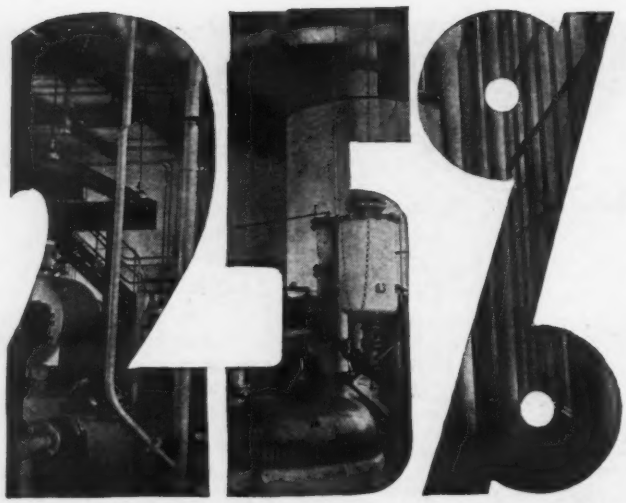

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From the same process equipment—merely by a change in the method of handling the condensate

The results from the installation of the C-B System in processes using steam for cooking or drying are simply amazing. Fuel Savings up to 25% are not only possible but have often been exceeded. Production increases equally high are common and time savings and labor savings add to the overall economies.

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COCHRANE C-B SYSTEM

CONDENSATE RETURNED TO BOILERS AT HIGH PRESSURE AND HIGH TEMPERATURE

"World-Standard" Textile Testers

The 60 models of *Scott Testers enable you to apply recognized standard tests to your research, purchasing, production control and acceptance inspection. Models with capacity from single hair to 1 ton for tensile, hysteresis, burst, twist, crepeage, etc., etc.

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STEAM POWER PLANTS • STEAM UTILIZATION

WATER • APPRAISALS • PLANS • REPORTS

ing equipment. Robert & Co., Atlanta, Ga., architects and engineers, have prepared the plans, with the contract scheduled to be awarded soon.

Palmer Brothers Co., New London, Conn., has been taken over by new interests, headed by Morris David and Lester Martin, who will be active in management in future. Mill at Fitchville, Conn., will be continued without change.

San Joaquin Valley Association of Commercial Organization Secretaries, Bakersfield, Calif., is interested in a proposal to establish spinning mills in that vicinity to provide a nearby outlet for the cotton grown in Kern, Tulare, and Kings counties.

S. Slater & Sons, Slater, S. C., have asked bids for alterations and improvements in mills, including re-roofing of various structures and other work. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

Southern Friction Materials Co., Charlotte, N. C., has begun work on one-story addition to mill in Chemway district, reported to cost close to $45,000 with equipment to permit 50% increase in production of "Cotton-Leather."

Tuscarora Cotton Mills, Inc., Mount Pleasant, N. C. —Controlling .nterest in this company has been purchased from O. A. Barringer, secretary and treasurer, by Martin B. Foil, an official of Cannon Mills Co., Concord, N. C., who will assume active management at once. Production will be continued as heretofore. Mr. Barringer is retiring from active business. Plant comprises 8,000 spindles.

Whittenton Mfg. Co., Inc., Taunton, Mass., has been acquired by Loomcrest Co., 514 Broadway, New York, N. Y., (Samuel Martin, president) which will operate as an affiliated interest in future. Production will be continued as heretofore with 14,000 cotton spindles, 3,500 woolen spindles and 276 looms. Sale was made by Jacob Ziskind.

Wool Mill News

Allendale Co., Allendale, R. I., has been organized by Charles Rockwell, vice-president and treasurer of Collins & Aikman Corp., Philadelphia, Pa., to take over and operate Allendale mill of last noted company. Operations will be maintained as heretofore. Mr. Rockwell will be president of new company.

Artloom Corp., Philadelphia, Pa., is planning an expenditure of about $1,500,000, for postwar expansion previously reported including installation of additional machinery for axminster rug and carpet manufacture.

Briggs & Little Woolen Mills, York Mills, N. B., have plans under way for new one-story addition, reported to cost close to $60,000, with equipment.

Greenfield Carpet Co., Inc., which operates two plants in Greenfield and Hillsborough, N. H., has purchased the former Griffin Shoe factory on Page street, Manchester, N. H., and will move its plants there during the summer.

Hamburger Woolen Co. of California, has been incorporated in Los Angeles, with 1500 shares of no par value capital stock. Directors are: Joseph C. Cannon, C. M. Shannon, R. C. Callender and E. J. Hayne, all of Los Angeles. The new corporation is represented by Joseph C. Cannon, 510 South Spring street, Los Angeles, Calif.

Hamilton Woolen Mills, Inc., Yantic, Conn., has changed its corporate name to Yantic Woolen Mills, Inc.

Paragon Worsted Co., Providence, R. I., plans two-story addition, reported to cost close to $50,000, with equipment. Nicholas Di Bennedetto, Providence, is architect.

S. Stroock & Co., Newburgh, N. Y., have voted to increase capitalization from 100,000 to 300,000 shares of stock, no par value.

Sykinson Spinning Co., Lowell, Mass., is a new enterprise for the production of worsted knitting yarns. The plant has 1,008 worsted spindles. Fred Atkinson, president and manager, was with Collins & Aikman Co. for 16 years and later with Stephens Spinning Co., Manchester, N. H.

Upholstery Weaving Corp., New York, N. Y., care of Maurice S. Levy, 1450 Broadway, New York, attorney and representative, has been organized with capital of 200 shares of stock, no par value, to operate a mill in this vicinity.

Just in case you've eased up... ON YOUR PAY ROLL PLAN

Pause one brief moment. Compare your lot—and that of the men and women in your employ—with the lot of the infantrymen who meet the enemy face to face, who do the hardest fighting, who suffer the most casualties.

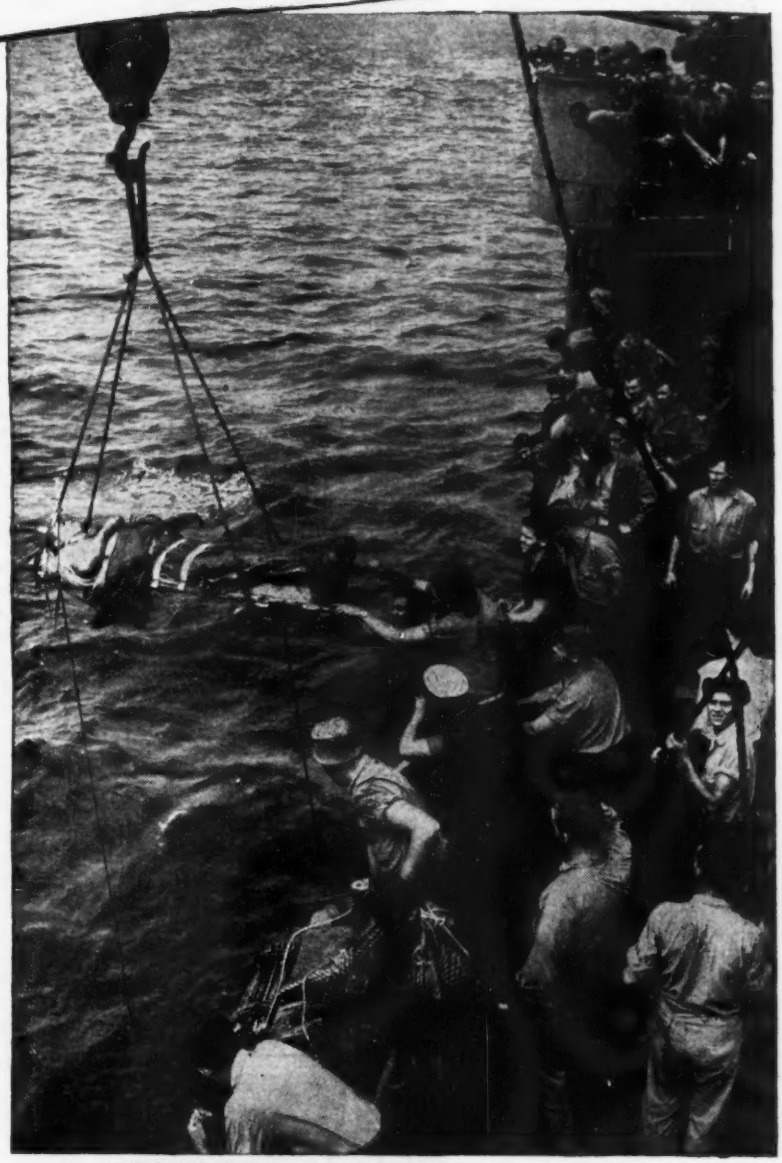
Let the full impact of war's unending grimness swiftly convert any tendency toward complacency into revitalized urgency. Remember—the war is not yet won.

As top management and labor, you've been entrusted with two major responsibilities—steadily maintained production, and steadily maintained War Bond Sales *through your Pay Roll Savings Plan.*

Decide *now* to revitalize your plant's Pay Roll Plan. Have your Bond Committee recheck all employee lists for percentages of participation and individual deductions. Have Team Captains personally contact each old *and new* employee. Raise all percentage figures wherever possible.

Don't underestimate the importance of this task. This marginal group represents *a potential sales increase of 25% to 30% on all Pay Roll Plans!*

Your success will be twofold: A new high in War Bond Sales; and a new high in production. Because a worker with a systematic savings plan has his mind on his work—not on post-war financial worries. He's taking care of the future now. His own. And his Country's future. *Help him!* REVITALIZE YOUR WAR BOND PAY ROLL SAVINGS PLAN.



Official U. S. Coast Guard Photo: The elevator to a Coast Guard-operated transport hospital

Back the Attack!

SELL MORE THAN BEFORE!

The Treasury Department acknowledges with appreciation the publication of this message by

TEXTILE WORLD

This is an official U. S. Treasury advertisement—prepared under the auspices of Treasury Department and War Advertising Council.

AMERICAN

...more economical to use because....

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

Sales Manager, E. F. REDDING, MOUNT HOLLY, N. C.

CHATTANOOGA, TENN.
Mr. Tom Moore
736 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

INDUSTRIAL ENGINEERS

Specializing in

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

RALPH E. LOPER CO.

COST SYSTEMS — WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS — SPECIAL REPORTS

GREENVILLE, S.C. — FALL RIVER, MASS.

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

Rayon & Silk Mill News

Leon Ferenbach, Inc., Johnson City, Tenn., has begun to remodel a building which adjoins its Market street plant in order to expand its facilities. The expansion program should be completed and this new part of the plant in operation by Sept. 15.

Industrial Rayon Corp., Cleveland, Ohio, (previously reported) has completed removal of machinery to branch mill at Covington, Va., with installation of additional equipment for an enlarged dyeing and finishing plant for its circular knit fabrics. All departments have been placed on a capacity schedule.

Medical Fabrics, Inc., Mill St., Paterson, N. J., which recently removed its plant from Newark, N. J., to first noted address, is developing maximum production at new location in connection with recent contract from Army Medical Department for 12,000 doz. new type elastic bandages, using material perfected by American Viscose Corp.

Newmarket Mfg. Co., Lowell, Mass., has been bid for by an organization (not Textron, Inc.) headed by Royal Little. Melville Weston, president of the Newmarket company, declared directors have approved submission by the Second National Bank, Boston, of the proposal to acquire stock at $91 per share. Outstanding shares number 32,400 of no par value. The plant includes 1900 looms. Stockholders will act on the plan Aug. 15. In the meantime Gilbert Verney has stated that his company would make an offer to buy Newmarket at a higher net to stockholders.

Synthetic Fabrics, Inc., Marion, S. C., has arranged with government for extensions in mill, with additional equipment and facilities for war production. Cost estimated about $220,000, with larger part of fund to be used for machinery purchases.

U. S. Rayon, Inc., Brooklyn, Conn., has begun production of Furness continuous-process cuprammonium yarn.

Knit Goods Mills

Rufus D. Wilson, Inc., Burlington, N. C., manufacturers of women's full-fashioned hosiery since 1936, is changing its corporate name to Chadbourn Hosiery Mills, Inc., effective July 31. J. Chadbourn Bolles, president, stated that the change was decided at a recent meeting of the board of directors.

New England Knitting Co., Winsted, Conn., has installed a dual power system. It provides complete operation from its own steam engine or from the lines of the Connecticut Light and Power Co. Any department or the entire plant may be operated from either source by throwing the switch.

Thomas Mills, Inc., High Point, N. C., have work under way on one-story addition, for which general contract recently was let to R. K. Stewart & Son, High Point. Cost reported about $30,000, with equipment.

Processing Plant News

American Processing Co., New York, N. Y., care of Samuel Shapiro, 233 Broadway, attorney and representative, recently organized, plans operation of a textile processing and finishing mill in that vicinity.

Anderson Utilization Co., Anderson, S. C., is a new concern which began operations about the first of July. The company is processing rope for the War Department.

Atlantic Rayon Corp. has purchased the yarn dyeing plant at 86 Crary St., Providence, R. I., from Textron, Inc., and will operate it under that firm's former name Atlantic Rayon Corp. The new operating company is headed by H. F. C. Wilcox, formerly general manager.

Housatonic Dyeing & Printing Co., Derby, Conn. (previously reported) has work well advanced on completion of partially erected building on Roosevelt Drive, recently acquired, for which contract was let to Gilormine Co., Milford, Conn. It is expected to have structure ready for occupancy for increased capacity at early date. Cost reported over $25,000, with equipment.

J. C. Nathanson, Inc., Warwick, R. I., has been organized by Joseph G. Nathanson, Warwick, and associates, with capital of 500 shares of stock, to operate a dye, print and finish mill in that vicinity.

As Every Fixer Knows...

As every fixer knows, the value of a knitting machine replacement part depends not on its cost but upon its ability to function efficiently in a knitting machine. Thus, using a part made by someone who does not understand perfectly *what it does* in the knitting operation is a gamble that risks both the machine and the quality of the work it does.

Every S & W replacement part is engineered to function exactly the same as the original part. That is as much a matter of the correct selection and treatment of the steel as it is of careful machining. And when you buy replacement parts from S & W you *know* that you are exactly duplicating the original.

Scott & Williams is prepared to supply all parts for which customers have priorities. It will pay you to use this service to protect the efficiency of your machines now and in meeting post-war competition. Teletype service is free from our New York and High Point, North Carolina, offices.

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

BUY WAR BONDS FOR VICTORY

EMPIRE STATE BUILDING NEW YORK 1, N. Y.

SOUTHERN SALES OFFICE: HIGH POINT, NORTH CAROLINA

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
10 cents a word, minimum charge $2.00. (See ¶ on Box Numbers.)
POSITIONS WANTED (full or part-time individual salaried employment only), ½ above rates.
PROPOSALS, 50 cents a line an insertion.

INFORMATION:
BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.
DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:
The advertising rate is $5.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W.

NEW ADVERTISEMENTS received by 10 A. M. August 28th will appear in the September issue, subject to limitations of space available.

Over Forty-five Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 **294 WASHINGTON STREET, BOSTON 8, MASS.**

POSITIONS VACANT

WANTED Boss Carder and spinner, Midwest mill. Excellent opportunity for a man desiring permanent position. Write full particulars. P-909, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED Dyer and chemist, Midwest mill. Excellent opportunity for man desiring permanent position. Write full particulars. P-910, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED: Dye-House laboratory man; thoroughly familiar with formula work on woolens, worsted and rayon combinations. Excellent opportunity for advancement. In replying state past experience, salary expected. P-927, Textile World, 330 W. 42nd St., New York 18, N. Y.

LOOM FIXER wanted capable of taking responsibility for looking after small number of narrow fabric looms on night shift. P-919, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED MAN with good knowledge of heavy duty narrow tape looms and/or circular weaving looms to take over supervision of hundred employee weaving plant excellent opportunity present and future. P-915, Textile World, 330 W. 42nd St., New York 18, N. Y.

LOOM FIXER and general utility mechanic must have some knowledge of tape or circular weaving looms. P-916, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

PRACTICAL RAYON crepe and hosiery thrower desires to make connection with a reputable concern. Age 44. PW-891, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

NYLON HOSIERY tram throwing. Post-war plans of a large hosiery mill. A technical and practical superintendent of modern throwing desires to contact a hosiery mill contemplating their own nylon throwing department. Married, age 38, location no object. PW-913, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 214)

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL

Interesting booklet concerning Inventions, Patents, Trade-Marks and Copyrights, together with Schedule of Government and Attorney's Fees, sent without obligation. Simply ask for "booklet and schedule."

Established 1915

Patents & Trade-Marks

Suite 448, 815—15th St., N.W. Washington 5, D. C.

J. L. TUCKER

Consulting Service

for

MANUFACTURERS AND USERS OF FIBERS AND TEXTILE PRODUCTS ON FIBERS PRODUCTS PROCESSES ENGINEERING

Box 37, North Scituate, Rhode Island — P. O. Box 494, Newark, Ohio

WANTED

TEXTILE BUYER

Nationally known company has attractive opening for buyer of cotton and rayon textiles, including ducks, twills, hollands, etc. Prefer experienced man but will consider and train young man with some operating background, and who is interested in textile industry. Detail work required along with buying. Personality must be above average. In reply, state age, experience and salary requirement.

P-902, Textile World
520 North Michigan Ave., Chicago 11, Ill.

For Silk Throwing Plants

Manager—For large throwing plant. Must be able to produce efficiently all types of yarn for weaving and particularly hosiery knitting trade. Must have tact, and thorough experience with unquestionable background to substantiate requisites. Also a high-class throwing executive who is able to spend most of his time traveling and visiting various mills. He must know the throwing business from A to Z, be capable of making recommendations, suggestions, etc. Also a Coning Fixer Foreman. These positions will pay well and are with a well-established concern. Address in confidence.

CHARLES P. RAYMOND SERVICE, INC.
294 Washington St. Boston, Mass.
Over forty-five years Confidential Employment Service for Mills

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-907, Textile World
330 West 42nd St., New York 18, N. Y.

POSITION VACANT

TECHNICAL EDITOR

For textile magazine. Must have exceptionally good command of English. Write experience and salary required.

P-854, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

DYER AND CHEMIST

Narrow fabric mill located in the South, requires the services of a man who can supervise the dyeing of narrow fabrics both cotton and rayon for package and skein, on vat and direct colors, also raw stock dyeing. Good opportunity for a man who is looking for a permanent position. Please write giving full particulars.

P-901, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

EXPERIENCED MAN

To organize and supervise a rubber thread covering machine plant. Please state previous experience in reply.

P-925, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

DESIGNER

Must be thoroughly familiar with all types of pile fabrics and yarns.
State age, experience, previous connection, salary desired.

P-908, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Experienced quiller fixer

for #90 Universal Quiller machines running on rayon and acetate. Permanent position.

P-903, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

FIXERS

for Scott & Williams and Acme Hosiery Knitting Machines
Steady Employment

P-896, Textile World
330 W. 42nd St., New York 18, N. Y.

Don't forget the

BOX NUMBER

When answering classified advertisements.
It is our only means of identifying the advertising you are answering.

(Additional Employment & Business Opportunity Advertising on page 214)

THE TOUGHER THEY ARE
THE BETTER WE LIKE 'EM!

THIS DOOR IS NEVER CLOSED

COME RIGHT IN FOR SERVICE

Choke off trouble before it starts! Our ◀MLC▶ Service for Buying and Selling is the answer. Bring us your problems and let our know-how get you RESULTS!

Partial List of ◀MLC▶ Stock Items Ready For Immediate Delivery

2—46" Button Breakers

1—52" Button Breaker

1—42" Butterworth 3-Roll Friction and Rolling Calender, motor driven

3—Smith & Furbush All-iron Card Sets, 48" wide, taking off 60 ends

1—Complete Set Combers including:
1—Whitin Ribbon Lapper
1—Whitin Sliver Lapper
8—Whitin Model "C" Combers

1—Rotary Cloth Cutter, 5" knife

1—72" P.&W. Semi-Decating Machine, complete with Nash Pump and Motor, cylinder 12" dia. by 72" face.

2—100 Spindle Foster Model 25 Doublers

1—46" Windle Doubler

1—36" Doubling & Winding Machine

5—Dblg., Boarding & Winding Machines

1—6 Delv. Whitin Drawing Frame with 12" coiler

1—66" Heathcote Cloth Dryer, wood housing, 17 yds. when loaded

1—28" Stick Klauder Weldon Skein Dyeing Machine

1—28" American Laundry belt driven extractor

1—40" American Tool underdriven Copper basket belt driven extractor

2—Hunter No. 10 Fulling Mills

1—40" Elliott & Hall Folding Machines

4—42" Elliott & Hall Folding Machines

4—46" Elliott & Hall Folding Machines

1—Card grinder, no motor

1—4 delivery H & B drawing frame

1—6 delivery H & B drawing frame

8—1200 h. Halton Jacquards, 9" lift

58—38" Model E Draper Auto. Looms

120—40" Draper Modified "D" Looms for 20 harness work (double index dobbies) 45½" reed space, belt driven

60—42" Modified "E" Draper with roller tops, 47½" reed space, belt driven

19—44" Model D Modified Draper Auto. Looms

50—52" C & K 4 x 1 Auto Looms, 56½ R.S. 25 Har. Belt Driven

110—76" Draper Modified "D" (1928) Lacey Top Looms, 6 harness, 81" reed space; individually motor driven, 3 phase, 60 cycle, 220 volt motors.

18—82" C & K 4 x 4 25 Harness motor driven woolen looms

2—82" C & K (4 x 4) 25 Harness Woolen Looms, belt driven

1—90" D. F. Single Acting 14 Roll Napper

1—66" Voelker Cloth Press

1—60" C & M Plush Shear

3—66" C & M 2-Blade Shears

3—66" P & W 2-Blade Shears

1—72" Montsford 2-Blade Shear

1—Schultze 106" Double Shear

1—66½" P & W Model A 3-Blade Shear

1—42" C. & M. 5 Burner Gas Singer

3—204 Sp. Lowell 2¼" Ring Band dr. Spinners

8—120 Spindle Draper Spoolers with Foster Tensions and McCall Guides

1—60" C & M Tiger

4—20 Spindle Universal #90 Filling Bobbin Winders, bottom supply

9—100 Spindle Foster #12 tube winders, belt driven

2—200-spindle Draper 2¼" Ring Tape Drive Twisters

2—82" D. & F. Warpers with Beamers, etc.

1—Barber Coleman Auto. Warp Tying Mach., size 4-E.

1—#90 Universal Winder

2—60" Edge Stenciling & Winding Machines

2—Saco-Lowell Rag Pickers with feeds

6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools

10,000—4½" x 6" Wooden Spools

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

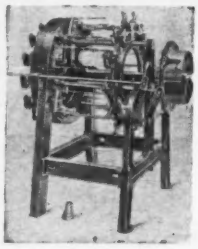
EST. 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

TWISTING • WINDING KNITTING • BRAIDING and ROPE MACHINERY



BRAIDING MACHINES
of all types for use in the manufacture of parachute cords, military cords, flat tapes, rugs, elastic tapes and braids, wire cords and brands, etc.

TWISTING MACHINES
in various makes, for hundreds of uses such as: cords, twines, rope, quimpe, wire, etc.

KNITTING MACHINES
for use in the manufacture of nettings, cloths of all types, rug materials, curtains, elastic girdle fabrics, hosiery webbing, shoe cloths, pocketbook materials.

WINDING MACHINES
of all types and makes for threading, winding and spooling. We have been handling above type of equipment for the past 20 years and solicit any and all inquiries for anything in textiles.

All above priced for quick sales. Quite a few knitting and braiding machines set up on our floors, where all machines are located. Machines in operating condition with material such as nets, rugs, dish cloths, cords, flat plain and fancy braids in them.

ROBERT SOLOMON & CO., Inc.
Textile Equipment Specialists
162-168 Greene St., New York, N. Y.

20—Draper looms, Model "E" for 62" goods
16—Draper looms, Modified "D" for 54" goods
20—C. & K. 75" automatic looms, filling mixer, 2x4, motor driven, bobbin changing
100—#90 Universal Quillers or coppers
30—C. & K. 78" 2x1, 20 harness Intermediate head looms, roller bearing, shock absorber, individually motor driven
1—Eastwood Warper, 83", low beamer, roller bearing, weightless tension, individually motor driven
1—Foster Winder, roller bearing head, 100 spindles

PATERSON
SILK MACHINERY EXCHANGE
24 SPRUCE STREET SHERWOOD 2-1363-4-5 PATERSON, N. J.

JOHN J. McCLOSKEY, Inc.
MANUFACTURERS AND DEALERS
TEXTILE MACHINERY OF ALL TYPES
APPRAISALS WOOLEN—WORSTED—COTTON LIQUIDATIONS
NEW AND USED
Philadelphia Office: 140-142 So. Front Street, Factory Warehouse: Collingswood, N. J.

HARRY STEPHENSON
IMPORTER, DEALER AND MANUFACTURER
TEXTILE MACHINERY AND APPLIANCES
New and Used
River Works, Andover, Mass.

GAINES TEXTILE MACHINERY CO.
Dealers In Rebuilt and Guaranteed Yarn Winding and Spinning Machinery
141-45 West 17th Street New York, N. Y.

HOSIERY MACHINES
KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS
C. M. FRENCH
Commercial Trust Bldg., Philadelphia 2, Pa.

AIR COMPRESSORS
17—355, 528, 730 & 1100 ft. Cap.
TANKS ON TOWERS
25,000, 50,000, 70,000 & 100,000 Gal. Cap.
—Towers 25 to 156 ft. high.
R. C. STANHOPE, INC.
60 East 42nd St. New York, N. Y.

FOR SALE

18—Scott & Williams Circular Knitting Machines, 12 cut, 36 gauge, 8 feed with 16 end stop motion. Cylinders 15" to 20". Serial Nos. 14,000 - 16,000 A.
1—20" Scott & Williams Cuff machine
1—500 Gal. Permutit Water Softener
1—6" International Dry Pipe Valve

JONES MACHINERY COMPANY
P. O. BOX 1093 ATLANTA 1, GA.

L. J. McCAFFREY & SON

FOR SALE
BOBBINS

900—14 x 7 Worsted Drawing Bobbins
354,580—7" Automatic Loom—3 ring
225,350—8" Auto. Loom—Blk. Enamel—3 ring
22,619—Twister—Blk. Enamel—8½ o.a. x 2½ x 1⅞
8,000—Twister—5" x 2" x 1⅞"
65,300—Twister—6" x 2" x 1¾"
10,000—Triptod 7" Bobbins
1,000—Jack Spools—32½" x 10" Hd.
1,500—Worsted Spools—12 x 6

ALL ABOVE ITEMS OWNED BY US. SEND LISTS OF ANYTHING YOU HAVE FOR SALE.
BOX 495 PAWTUCKET, R. I.

FOR SALE
Parkhurst 48 in. DUPLEX BURR PICKER
2—WHITIN 50 inch CARD FEEDS
Davis & Furber MIXING PICKER
HARWOOD Large Hopper FEED
One SPENCER OILER
15—TOMPKINS KNITTING TABLES
EXTRA-CYLINDERS
(Both Spring & Latch Needles)
KNITTING PARTS
BURR-WHEELS
(All makes and Gages)
2—DAVIS & FURBER 80 inch NAPPERS
McCREARY 4 roll STEAM CALENDER
3—Firsching SLITTING MACHINES
1—Ireland SLITTING MACHINE
1—Grand Rapids SLITTING MACHINE
1—Adams SLITTING MACHINE
4—PAYNE 40 sp. BOTTLE WINDERS
Geo. E. Smith Textile Machinery Co.
P. O. BOX 46 COHOES, N. Y.

FOR SALE

1—Butterworth 60" Weft Straightener
1—Franklin 200 lb. Package Dyeing Machine
1—Textile 42" Backfiller, Brass Expander
1—Altemus Yarn Splitter and Coiler
1—set 27 Copper Dry Cans, 23" x 47" face
1—set 18 Dry Cans, 23" x 141", Vertical
1—C. & M. Model "C" 4 blade 50" Shear
1—Butterworth 5-roll 50" Calender
1—Barber Colman 4E Tying-In Machine
2—Saco-Lowell 7' and 5' Cylinder Slashers
50—Draper Model "K" 40" Looms

JAMES E. FITZGERALD
TEXTILE MACHINERY
10 Purchase Street Fall River, Mass.

KNITTING MACHINES
Scott & Williams — Banner — Wildman — Reading — Kalio — etc., etc.
All types of hosiery mill equipment on hand
THE MORRIS SPEIZMAN CO.
508-14 West Fifth St. Charlotte, N. C.

FOR SALE
BUTTERWORTH CALENDAR
7 ROLLS—80" FACE
3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South
AMES BAG CO.
10 EAST 40TH ST. NEW YORK CITY

SINGEING MACHINE

1—80" 2-Burner Singeing Machine.

PRINTING MACHINES

7—R. B. & F. 1-10 color Print Machines, 40-60" wide.
1—V.V. 10-color Ribbon Printing Machine, complete with Back Grey Washer and Jack.

AGERS

2—Cast Iron Agers, 18' long x 50" & 60" wide.
1—Cast Iron Ager, 12' long x 66" wide.
1—Haveg Patch Ager.
1—Butterworth Cast Iron AGER, 30' lg. x 50" wd.

KETTLES

20—Textile Copper Steam Jacketed Color Kettles, tilting type, agitated, 24 to 100 gallons capacity.

CAN DRYERS

450—Dry Cans, 50" to 108" face, 23" to 84" dia.

FULLING MILLS

1—James Hunter #10 Fulling Mill.
6—Rodney-Hunt Fulling Mills, gear drive.
2—Single Line Fulling Mills, rubber rolls.

OPEN WASHERS

1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—Complete Wash Unit, consisting of Grey Washer, Dry Cans, unrolling stand and motor.
1—6-compartment 30' Washer, 66" wide.

ROPE SOAPER

1—V.V. Continuous Square Formation Washer.

DYE BECKS

10—Butterworth, Morrison & V.V. 6' & 8' Dry Becks, stainless steel and wood tubs.

BLEACHING

1—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type.
2—Lincoln 2-roll Rope Squeeze Rolls.

SCOURING & DYEING MACHINES

2—Haveg Dye, or Washing Machines, completely enclosed.
1—Sargent 3-Bowl Skein Scouring Machine.
10—Klauder-Weldon Skein Dyeing Machines.
1—Sargent 4-Bowl 48" Wool Scouring Washer.
1—Rodney Hunt 7-String Dyeing Machine.
1—Obermaier Combination Package & Rawstick Dyeing Machine.
1—Buhlmann 100 roller cap. 14-color adjustment skein dyeing machine.

DYE JIGGS

6—Dye Jiggs, 54" rubber covered rolls.
1—Battery 4-Morrison stainless steel lined Dye Jiggs, 50", tilting expanders.

EXTRACTORS

6—V.V. & Tolhurst 54" & 60" rubber & copper basket extractors.
8—V.V. Fletcher & Tolhurst 40", 44", 48" Extractors, copper lined.
10—Tolhurst, American Laundry, Adams, Troy & Bach Copper Lined Extractors, 14", 17", 20", 26", & 32".

CALENDERS

2—V.V. Ball Bearing Calenders, 50" & 60".
2—McCreary 50" & 54" Knit Goods Calenders.
1—Perkins 3-Roll Hydraulic Calenders.
1—Textile 3-Roll 80" Calenders.
1—Butterworth 2-Roll 54" Schreiner Calender.
1—Butterworth 3-Roll 54" Friction Calender.

SHEARS

1—P. & W. 3-Blade Shear, 60½" with list saving device.
1—P. & W. Double Blade Shear, 66½".

DECATERS

1—Gessner Full Decating Machine, 72" wide.
3—Gessner & Yale Semi-Decating Machines 50", 62" & 72" wide.

SPECIAL OFFERINGS

1—P & S 4-Fan 30' Loop Dryer.
1—G.L. 3-Section Steel Rope-Washer.
1—Morrison 50" 19-Roll Heavy Duty Button Breaker.

DRYERS

3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48" automatic Feeder.
1—P & S 36' Loop Dryer, 90" poles, rebuilt by National. Equipped with high speed booster fans, airfins.
2—V.V. 5-Tier, 50" & 60" Net Dryers.
4—Sargent & Hunter Wool Carbonizing Dryers.
1—Single Truck Dryer.
1—Multipass Airlay Dryer.
8—Proctor & Schwartz Yarn Drying Machines.

NAPPERS

5—D & F & Woonsocket Nappers, 60-90".
1—Gessner 20-Roll 66" Double Acting Napper.
1—60" Box Napper.
1—Woonsocket 66" 24-Roll Double Acting Napper.

TENTER FRAMES

1—W & J 80' x 50" Swing Tenter Frame.
1—Heathcote Pin Tenter Frame.
1—25' Tenter, with Bakelite Clips.

PALMER QUETCH

3—Morrison & V.V. 50", 60" & 72" Palmer Quetch Units.
1—V.V. Palmer Quetch Unit, low type, 65" wide.
1—Butterworth 84" Palmer with 84" mangle.

PADDERS, MANGLES, QUETCHES

3—Textile 50" 2-Roll Dye Padders.
4—Butterworth 50" 2-Roll Starch Mangles.
1—Textile 2-Roll 70" Padder.
5—Butterworth & Morrison 2 & 3-Roll Quetches, 50-72" wide.
5—Quetches, 2- & 3-Roll 36-72" wide.
1—James Hunter 50" Water Mangle.

STEAMING & FINISHING MACHINES

3—Steaming Machines for Tubular goods.
2—C & M Finishing Machines for Tubular Goods.

BUTTON BREAKERS

3—Morrison & V.V. Button Breakers, brass rolls, 50-72".

BEAMERS — BATCHERS

4—Van Vlaanderen 50" & 60" Beamers.
14—Batchers, 48"-72".

EXAMINING MACHINES

2—Examining Machines for tubular goods.

FLAT FOLDERS

4—Elliot & Hall Flat Folders, 42" to 66".

DOUBLERS

5—P & W & Windle 46"-66" Doubling, Reeling and Measuring Machines.

SEWING MACHINES

15—Merrow 60 ABB & 60D3B on tracks.
14—Merrow 60 ABB & 60D3B on portable stands.

PRESSES

1—Logemann All Steel Paper Baler.
2—Shick & Economy All Steel Presses.
3—Gessner 66" & 72" Wool Presses.

LOOMS

24—82" 4 x 1 Automatic Looms.
4—C & K 4 x 4, 80" Rayon Looms.
100—V & K 50" Rayon Looms.
94—Draper Model E 44" Automatic Looms.

COUNTERS

250—Waltham Pick Counters.

WATER SOFTENERS

1—Permutit Water Softener, 103" hg, 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8" dia x 20' lg, complete with pipe and valves.

CARDING MACHINES

6—D & F Tatham Breaker Cards, 40" x 50".
2—D & F Finisher Cards, 48" x 50".
7—Whitin Breaker Cards, 48" x 50".

MISCELLANEOUS

Skein Reeler, Universal Tubers, Winders, gas boiler, scutchers, expanders, sewing machines, trucks, generator sets, motors, rubber lined tanks, modine heaters, exhaust fans, pleaters, mandrils, doctor blades, gears, lathes, portable agitators, accumulators, wood shells, Weidemann control unit, humidifiers, etc.

CONSOLIDATED
PRODUCTS CO., INC.
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TEXTILE DIVISION, PATERSON, N. J.
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New York 7, N.Y. 15 Park Row • Tel. BArclay 7-0600
"CONSOLIDATED" Supplies Equipment for
PROCESS • TEXTILE • MINING • FOOD • CHEMICAL
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RUBBER • SUGAR • SOAP • *and related* INDUSTRIES

FOR 25 YEARS A FRIEND OF COMMERCE

"CONSOLIDATED"
SUPPLYING TEXTILE EQUIPMENT FOR THE
DYEING BLEACHING WEAVING
FINISHING PRINTING SPINNING
of
RAYON COTTON WOOL
WOOL FABRICS and WORSTEDS

ATTACK — KEEP BUYING WAR BONDS

FOR SALE

1 Ingersoll-Rand Compressor 14x8, single stage, complete with idler.
12 Draper Mod. D auto. bobbin change Looms, 69½" R.S.—20 harness, arr. for motor drive.
12 Stafford 40" shuttle change Looms, motor drive 220V.
1 41 can 44" face, copper can, horizontal Dryer, removable journals, with Mycock Expander.
1 E&H Cloth Folder, 42" goods (Duck)
1 Extractor 17" basket, safety cover, enclosed motor drive 110 Volts.

BOBBINS • SPOOLS (all sizes) • SUPPLIES • PULLEYS, etc.

Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

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1800 SPOOLS

3¾" dia. metal ends 1¼" dia. fibre core 5" traverse ⅜" center hole

All in excellent condition

Price 5¢ ea.

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FROM OUR OWN STOCK "HARD TO FIND MACHINERY":

1—U. S. Colloid Mill #12 with 3 Motors 550 V.
7—7' Copper Cans 56" wide
7—5' Copper Cans 56" wide
1—Set 10-50" Tinned Steel Cones
1—Warp Air Drier—7½ HP Motor
1—50 HP Slipring Motor and Controls 550 V.
1—130" Warp Splitter
2—Ping-Pong Machines
1—Wool Top Dye and Back Washer
1—48" Hydro Extractor—Rubber Lined Basket—Lead Lined Housing
2—A & G Yarn Driers (Continuous)
4—36" Hydro Extractors—2 Baskets Copper—2 Baskets Iron
3—54" Simpson Winders
2—40' Silk Tenters 50" or 60" wide
1—40' Straight Tenter 102" wide
2—45" B.B. Scutchers
1—V. Vlanderen Mixer with 15 HP Motor
1—66"—5 Bowl Watermangle
2—50"—6 Bowl Calenders—Roller Bearings
1—30' Silk Tenter—60" Complete with Drier and Steamer

TEL. DEXTER 9650 1128 N. MAIN ST.

PROVIDENCE, R. I.

FOR SALE
HYDRAULIC PRESSES

30"x52" 3 openings, 36"x36" single openings, 52"x26" single opening also other size Presses, Pumps and Accumulators. ALL TYPES HYDRAULIC MACHINERY. HIGHEST PRICES PAID FOR YOUR USED EQUIPMENT.

UNIVERSAL HYDRAULIC MACHINERY CO.
285 Hudson Street New York City 13

WANTED

(Additional Wanted Ads on page 214)

MR. JACQUES CADGENE

WISHES TO ANNOUNCE THE ORGANIZATION OF THE

CADGENE MACHINERY COMPANY

We are prepared to help you in disposing of or acquiring both complete plants and individual machines.

Your present and future inquiries are cordially invited

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WANTED

Draper—Crompton & Knowles

COTTON AND RAYON LOOMS

From 40" to 79½" Reed Space

•

COTTON SPINNING PLANT

5000 to 8000 Spindles

•

WOOLEN SPINNING PLANT

CAPACITY
500 lbs. Carded Yarn per Shift

•

WARP SIZING MACHINES, TENTERS, DRYERS, TWISTERS, CONE WINDERS

•

We will buy this equipment used, as is at mill floor

If you have any of the foregoing or similar equipment available. Write to

W-922, Textile World
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One Textile 48-Carrier Round Packing Braider
One Textile 32-Carrier Round Packing Braider
One Textile 8-Carrier #4 Square Packing Braider
Four New England Butt #2 Four Inch Horn Gear 24-Carrier Braiders
One Textile #2 Four Inch Horn Gear 16-Carrier Braider
Six Crompton & Knowles 12-Space Looms—Heavy Duty

ALL MACHINES RECENTLY REBUILT—A-1 CONDITION

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FOR SALE

1931 Voelker 84"
Rotary Cloth Press
Complete

Apply

FS-876, Textile World,
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New York 18, N. Y.

FOR SALE
30" LOOMS

76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

AMES BAG CO.
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TEXTILE MACHINERY

USED OR REBUILT
Spinning—Weaving—Dyeing
Finishing—Hosiery Knitting
Specialists in Export Trade

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Plum & Lowerline Street New Orleans, 18, La.
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LIQUIDATING

EXCELLENT TEXTILE EQUIPMENT READY FOR IMMEDIATE SHIPMENT

LOOMS

100—Draper Model K 45" Looms, Belt Driven, 8" Bobbin.
118—4 x 1 C & K Automatic Looms, 48½"
20—4 x 1 C & K Hand Threading Looms, 43½"
190—1 Box Automatic Hopedale Plain Looms
600—Draper Automatic Looms with Slashing Auxiliary equipment.
200—C & K 2 x 1 Looms.

DYE PADDER

1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll, Motor Driven.

EXTRACTORS

1—American 48" Open Top, Motor Driven Extractor, Copper Basket.
2—Van Vlaanderen 60" Motor Driven Extractors.

TENTER FRAMES

1—30" Pin Tenter Frame with Motor and Reduction Box.
1—Van Vlaanderen 30' Tenter Frame, equipped with Stainless Steel, High Speed Spring Type Clips, Reeves Variable Speed Transmission, A.C. Motor.
1—Windsor & Jerauld 40' Tenter Frame, equipped with Stainless Steel Tenter Clips, Reeves Variable Speed Transmission, A.C. Motor Drives.
Above 2 units are suitable for 50" goods.
1—30' Windsor & Jerauld Open Tenter Frame with Steam Heating Coils.
1—60' Windsor & Jerauld Tenter Frame with Proctor & Schwartz Housing.

PALMER

1—65" Van Vlaanderen Palmer Tenting Quetsch Unit, with Stainless Clips and Housing.

CAN DRYERS

1—Set of 20 Cans Textile Copper Cans, 23" diameter, 54" face, Vertical Stack.
1—Set of 18 Cans, 23" x 54" Face, Vertical Stack.
1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.
1—Set of Textile Dry Cans, 15 Cans, 23" x 78".

DYE BECKS

1—Stainless Steel Lined Sample Dye Beck.
1—Van Vlaanderen 4' Stainless Steel Lined Dye Beck.
1—Van Vlaanderen 19' Cypress Dye Beck.

SPECIAL
ENGRAVING EQUIPMENT

7—John Hope 50" Pantograph machines, Double Bar, #1381-1387.
10—John Hope 48" Pantograph machines, Double Bar, #1388-1397.
1—John Hope 45" Pantograph machine, Double Bar, #1398.

SPECIAL
COTTON SPINNING EQUIPMENT

2—Complete Murry Cotton Gins.

1—Kitson Bale Breaker, consisting of:
1—Automatic Feeder, 37½"
1—2 Beater Breaker Picker, Ball Bearing Beaters, 1—16" Porcupine Beater, 1—16" 2 Blade Beater, Motor Driven by 2—5 HP 440 Volt Motors.

3—Kitson 40" Intermediate Pickers with 2 Blade Ball Bearing Beaters, 16", and 12' Apron, Motor Driven.

3—Kitson Finisher Pickers, 2—16", 2 Blade Beaters, Ball Bearing, 12' Apron, Motor Driven.

39—Saco and Pettee 40" Revolving Flat Cards, 27" Doffers, 12" Coilers, 5 Point Settings, Spindle Back.

108—Deliveries, Saco and Pettee Drawing 1⅜" Metallic Rolls, 12" Coilers.

10—Saco and Pettee 11½ x 5½ Slubbers.
(1) 40 Spindles
(4) 52 Spindles
(5) 60 Spindles

2—Providence Slubbers, 11 x 5½, 60 Spindles, 1¼" Front Rolls, Serial No. 8400 Range.

11—Saco and Pettee Intermediates, 9 x 4½, 92 Spindles, 1¼" Rolls.

26—Saco and Pettee 7 x 3½ Speeders, 152 Spindles.

105—Fales & Jenks Spinning Frames, 240 Spindles, 2¾" Gauge, 1⅝" Rings, Whitin, Medium Spindles, Band Driven, 7" Cylinder, Wood Thread Boards, Motor Driven by 5 HP A. C. 440 Volt Motors, V-Belt Drive.

45—Fales & Jenks 220 Spindle Twisters, 3" Gauge, 2" Rings, Wood Thread Boards, 8 Slat Wood Creel, 7½ H. P. Motor Drive, 440 Volt, Clover Leaf Heads.

15—Easton Burnham and Draper Spoolers.

15—Universal #50 Winders.

KNITTING MACHINES

Wildman, Scott & Williams, Brinton, Supreme.

SEWING MACHINES

Singer, Union Special, Merrow, Metropolitan and Willcox & Gibbs Flatlocks.

FINISHING CALENDERS

1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calender, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, complete with Accumulator and Pump, direct connected to General Electric 3 H.P. A.C. Motor, 50 Volts, 60 Cycle, 3 Phase, 900 RPM, Type M.T., with Drum Controller, Magnetic Switch and Grids.
1—Van Vlaanderen 3-Roll Finishing Calender, Wool Felt Bowls, Large Diameter.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.
3—E & H Flat Folders, 45" to 60" wide.

KETTLES

7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallons capacity.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor.

DOUBLERS

2—Parks & Woolson 54" Doubling and Reeling machines.
1—Van Vlaanderen 60" Doubling and Winding machine.

PRINTING

1—Werner 50" Single Color Print machine.
1—Rice, Barton & Fales 7 Color 50" Print machine.
2—Rice, Barton & Fales 42" Print machines, 8 and 11 color.

PRINT MACHINE MOTORS

5—Print Machine Motors, 23 to 35 H.P.

SPECIAL

5—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive with one DeLaval Worm Reduction Gear Unit, direct connected to Lincoln 10 H.P. A.C. Motor, 550 Volts, 60 cycle, 3 phase, 1200 RPM with Control
1—Battery of 4 Morrison Stainless Steel Dye Jiggs, 50", A.C. Motor.
500—Butterworth Tenter Chain Clips, Type O-O Opening, Brass Faced Clips.

REMEMBER
Republic Textile
EQUIPMENT COMPANY
40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

SELL YOUR SURPLUS EQUIPMENT

IT IS NEEDED TO SPEED THE WAR'S END

DSP INC. ORGANIZATIONS

We have a demand for your surplus and idle equipment—a single item or a complete plant. Send us your list of such equipment—and put it to work where it is needed most.

WE PURCHASE ON A CASH BASIS

DULIEN STEEL PRODUCTS, INC.

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POSITIONS OFFERED

(Continued from page 208)

NYLON — RAYON — silk throwing. Hosiery tram throwster desires position as superintendent or assistant. 12 years of technical and practical experience in modern throwing. Nylon a specialty. Location no object. Married, age 38, presently employed but desire a change. PW-912, Textile World, 330 W. 42nd St., New York 18, N. Y.

INSPECTOR FOREMAN, production and mill office man seeks position offering post-war opportunity. 25 years practical mill experience on all types of fabrics, silk, rayon and combinations. Shaft and jacquards. General knowledge of yarns and figuring. 45 years, single, honorable discharge from Army, previously employed as Army textile inspector. PW-926, Textile World, 330 W. 42nd St., New York 18, N. Y.

AMBITIOUS YOUNG man, 26, B.S. soon available, seeks position with a progressive manufacturer or laboratory. Experience in textile testing and research. Excellent references. PW-911, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE INSTITUTE graduate. Twenty-five years executive experience wool and worsted, private concerns and government. Desire change in executive capacity. PW-914, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER WORSTED combing wants position, 38 years old. 19 years experience, Lowell Tech, Institute graduate. Present employer references. Personal interview desired. PW-917, Textile World, 330 W. 42nd St., New York 18, N. Y.

MANAGER SUPERINTENDENT. Desires change, go anywhere. Worsted spinning, french system. Mule and Ring. All types of yarn. 25 years practical experience in trade. Further particulars upon request. PW-928, Textile World, 330 W. 42nd St., New York 18, N. Y.

Long established manufacturer

of Textile equipment and supplies

is interested in

the manufacture and sale of new, patented,

mechanical and electrical products

and improvements on present products with special application to the Textile Industry.

We are also interested in the development of your ideas of new products to the point of completion, manufacture and sale.

BO-904, Textile World
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Exclusive export agency, presently or post-war, for knit goods, cottons and rayons desired by aggressive, successful export organization with world-wide connections.

RA-905, Textile World
330 West 42nd St., New York 18, N. Y.

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WITH LARGE AUTOMOTIVE CLIENTELE DESIRES TO REPRESENT RELIABLE TEXTILE MANUFACTURER CAPABLE OF FURNISHING AUTOMOTIVE FABRICS IN LARGE QUANTITIES.

RA 924, Textile World

330 West 42nd St., New York (18) N. Y.

WANTED

VELOUR MILL

Small Velour Weaving Mill Up to 25 Looms. Send Full Details as to the Type of Looms and Other Equipment.

W-883, Textile World
330 West 42nd St., New York 18, N. Y.

USED SPINNING MACHINERY

WANTED FOR EXPORT

We desire offers of old models carding and spinning machines 48" Cards.

AMEXIMPO, Inc.
277 Broadway, New York, N. Y.

WANTED

One small carding machine. State size, make, condition and price.

W-920, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Three Crompton & Knowles Automatic Handkerchief Looms 48" between swords 4x1 box, 140 picks per minute, 25 harness dobbies, with three phase motor 220/380 volts 50 cycles or without.

W-923, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

DYEING AND FINISHING PLANT

Will purchase or buy interest. Must be fully equipped for cottons, rayons, velvets, pile fabrics, etc. Give full particulars as to equipment, capacity, location, etc. Confidential. Principals only.

BO-918, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED TO BUY

Complete skein mercerizing plant, or will buy equipment only for skein or warp mercerizing. Apply to

BO-921, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

(Additional For Sale Ads on pages 209–215)

FOR SALE

8 tapestry looms 72" complete with 54" Jacquard harnesses—1304 Halton Double Lift—single cylinder Jacquards with loom supplies—shuttles—many warp beams—Cards & Designs for 3 shuttle tapestries, etc.

Also 6—1304 Double Lift, single cylinder Halton Jacquards and long chain beamer.

WAYNE MILLS COMPANY
Wayne Ave. & Berkley St., Germantown
PHILADELPHIA, PA.

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42" Van Vlaanderen extractor top drive 7½ H.P. 720 R.P.M. necessary starting switches $500.00. Also, N. J. Laundry Machine 6 ft. 2 section drum 54" belt drive $250.00.

RIVERSIDE DYEING & FINISHING COMPANY
96 Roanoke Avenue Newark, New Jersey

Come to Our New HEADQUARTERS for TEXTILE MACHINERY

We are sure that we can give you competent advice on the purchase of any type of used or reconditioned TEXTILE MACHINERY. You can save your *time* and *money* if you visit our new plant at 2568 Park Avenue, Bronx 51, New York.

Look Over This PARTIAL LIST

DYEING & FINISHING

1—**BRUSH** 4 roll 66½".
1—**CALENDER** 5 bowl 47", cotton.
1—**CALENDER** 3 roll 56", friction.
1—**CALENDER** 3 roll 42", friction.
1—**CALENDER** Embossing 2 roll 43" design rolls.
4—**DOUBLERS** 54" to 66" with clocks.
1—**DOUBLER & FOLDER** up to 90" width.
3—**DRY HEADS,** aluminum Baskets Tubular goods.
1—**SET DRY CANS** 50x23.
1—**SET DRY CANS** 75x30.
1—**SET DRY CANS** 44x23.
1—**DECATUR**—Semi 68", complete.
1—**DECATUR**—Full 72", complete.
2—**DRYERS,** Loop Unit Heaters.
2—**DRYERS,** Pin 80" complete.
1—**DYEING** Unit, **SKEIN** 27 arms.
9—**DYEING** Units, Skein 21 to 42 Sticks.
1—**DYEING** Unit, Warp 30" 6 compartment.
4—**EXTRACTORS** 30" to 60" baskets.
2—**FOLDERS** Ceiling type 45" & 68" drums.
3—**FULLING MILLS** Double Compartment.
1—**FULLING MILL** Hunter #26D.
1—**FULLING MILL** Sample Type.
2—**GRINDERS** Napper 80" & 110" rolls.
2—**HUMIDIFIERS,** Bahanson motor driven.
4—**MANGLES** 40" to 66" width, 2 & 3 roll units.
1—**NAPPER,** Knitgoods 72".
4—**NAPPERS** Woolen 80" & 86", 24 & 36 rolls, D.A.
3—**NAPPERS,** Cotton 80" D.A. 20 rolls.
1—**PALMER** 63" x 60" with Blanket.
3—**PRESSES,** Rotary 66½" Double Beds.
1—**PRESS,** Apron type 72".
2—**PRINTING MACHINES** 42" complete.
3—**QUETCHES** 44" to 60" complete.
1—**RAW STOCK** 5 Bowl Scouring Unit with Dryer.
2—**SEWING MACHINES** Rotary Foot Power.
1—**SEWING MACHINE** Railway 50" cloth.
9—**SHEARS** 32" to 84", Single to Five Blade Units, some with List Savers.
2—**SLASHERS,** 5' & 7' Drums 57" and 98" Headways.
6—**SQUEEZE SETS,** 60" to 76" rubber rolls complete with stands & bearings.
1—**STEAMING** Machine 68" x 21" cylinder with Blanket.
1—**TENTER FRAME CLAMP** 30'x56".
1—**TENTER FRAME CLAMP** 60'x48".
1—**TENTER FRAME CLAMP** 15'x62".
3—**WASHERS** 8' and 10' Boxes.
1—**YARN SCOURING UNIT** 3 Bowl.

CARDING, SPINNING AND WEAVING:

1—**BALING PRESS** 4'x3'x6' mtr. drive.
4—**SETS WOOLEN CARDS** 48x48.
6—**SETS WORSTED CARDS** 54"x54" and 60"x60".
2—**COMBS,** Worsted with circles.
2—**CONDENSERS,** Tape for 72" Cards.
2—FEEDS Bramwell used on 40" Cards.
44—Deliveries **DRAWING.**
32—**FRAMES, SPINNING** 2¾" Gauge.
1—**GARNETT** 60x20, Double Cylinder
1—**GILL BOX,** Cone 6 spindle.
4—Gill Preparers.
1—**GRINDER, CARD** 48".
6—**INTERMEDIATES** 10x5 and 9x 4½.
16—**LOOMS** Draper "E" Remodeled 38" mtr. drive.
27—**LOOMS** Draper "D" Remodeled 44" belt drive.
10—**LOOMS DRAPER** "P" Remodeled 64" belt drive.
45—**LOOMS** Draper "E" Remodeled 35½" mtr. drive.
12—**LOOMS** Stafford 40" motor driven.
32—**LOOMS. Stafford** 64½" & 75½" Reed Space, Belt drive.
2—**LOOMS** Fletcher High Speed Jacquard 19' 14".
47—**LOOMS** C&K 45" Automatic 4x1, 25 harness mtr. drive.
4—**LOOMS C&K** 76" 4x4, 25 harness mtr. drive.
22—**LOOMS C&K** 82" Automatic 4x1, 4 harness mtr. drive.
12—**LOOMS C&K** 92" Automatic Cam 8 harness mtr. drive.
38—**LOOMS C&K** 92" 4x4, 25 harness, belt drive.
6—**MULES** 480 Spindle Units 1¾" Gauge.
4—**MULES** 340 Spindle Units 1⅞" Gauge.
4—**MULES** 300 Spindle Units 2" Gauge.
1—**PICKER** Rag 28".
1—**PICKER** Mixing 36" with Oiler.
2—**PICKERS** 30" & 36" Burr.
3—**QUILLERS** 378 Spindle units.
5—**SLUBBERS** 12x6.
1—**ROVING** Frame 36 Spindle, Worsted.
8—**SPEEDERS** 8x4.
3—**SPINNERS** 5B take up to 12 ends.
1—**SPOOLER** 6 Drum Multiple.
10—**TWISTERS** 3" Gauge, Tape Driven.
1—**TWISTER** 3½" Gauge, Band Driven.
6—**TWISTERS** 3½" Gauge, Tape Driven, Novelty Yarns.
45—**TWISTERS,** Rayon Double Deck.
3—**WINDERS,** Cop 30 Spindle Units.
2—**WINDERS,** Bottle 48 Spindle Units.
3—**WINDERS** #90 V-Belt Drive.

MISCELLANEOUS SPARE PARTS: Bristle Brushes, Expander Rolls, Rubber Rolls, Wood & Metal Rolls, etc.

NORMAN M. McDOWELL ASSOCIATES
2568 Park Avenue Bronx 51, New York
Tel.: MElrose 5-1772

U.S.
RING TRAVELERS

THE NE-BOW

Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. Note "bend inward" at top of horn.

Because we know ALL the things that can make or break Ring Traveler performance, we produce Travelers for specific uses, that give the utmost life and service under all conditions. Design, balance and lubrication, as well as metallurgical composition, are carefully considered. Is it any wonder that so many of the leading mills use a U. S. brand?

Consultation without obligation!

• Sold under these trade names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO
AMOS M. BOWEN
President and Treasurer
PROVIDENCE RHODE ISLAND

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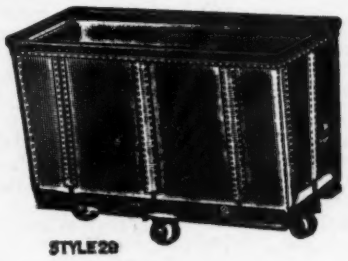

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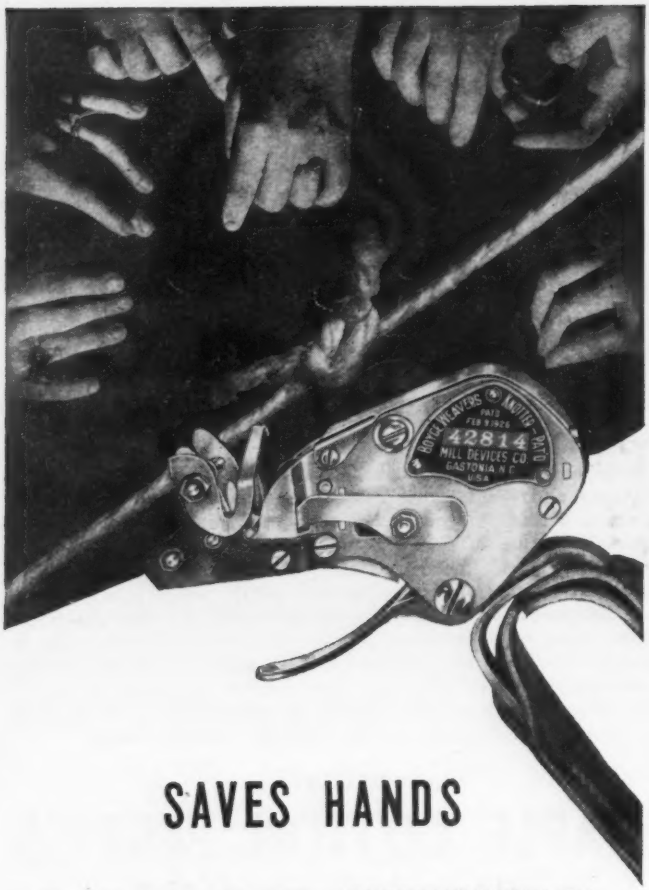

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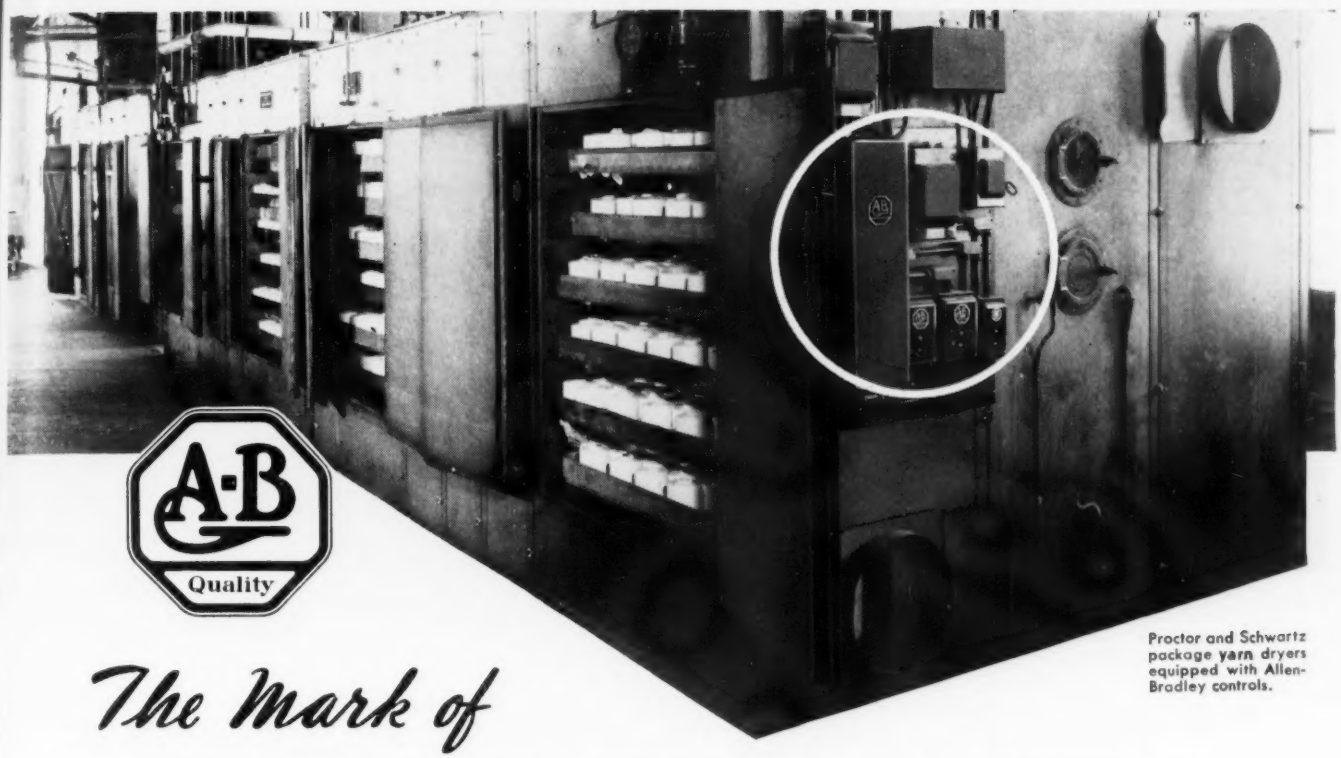

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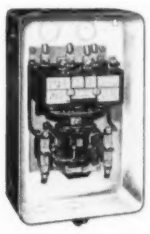

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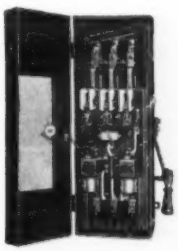

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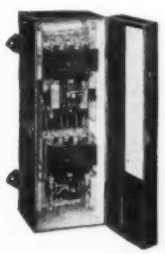

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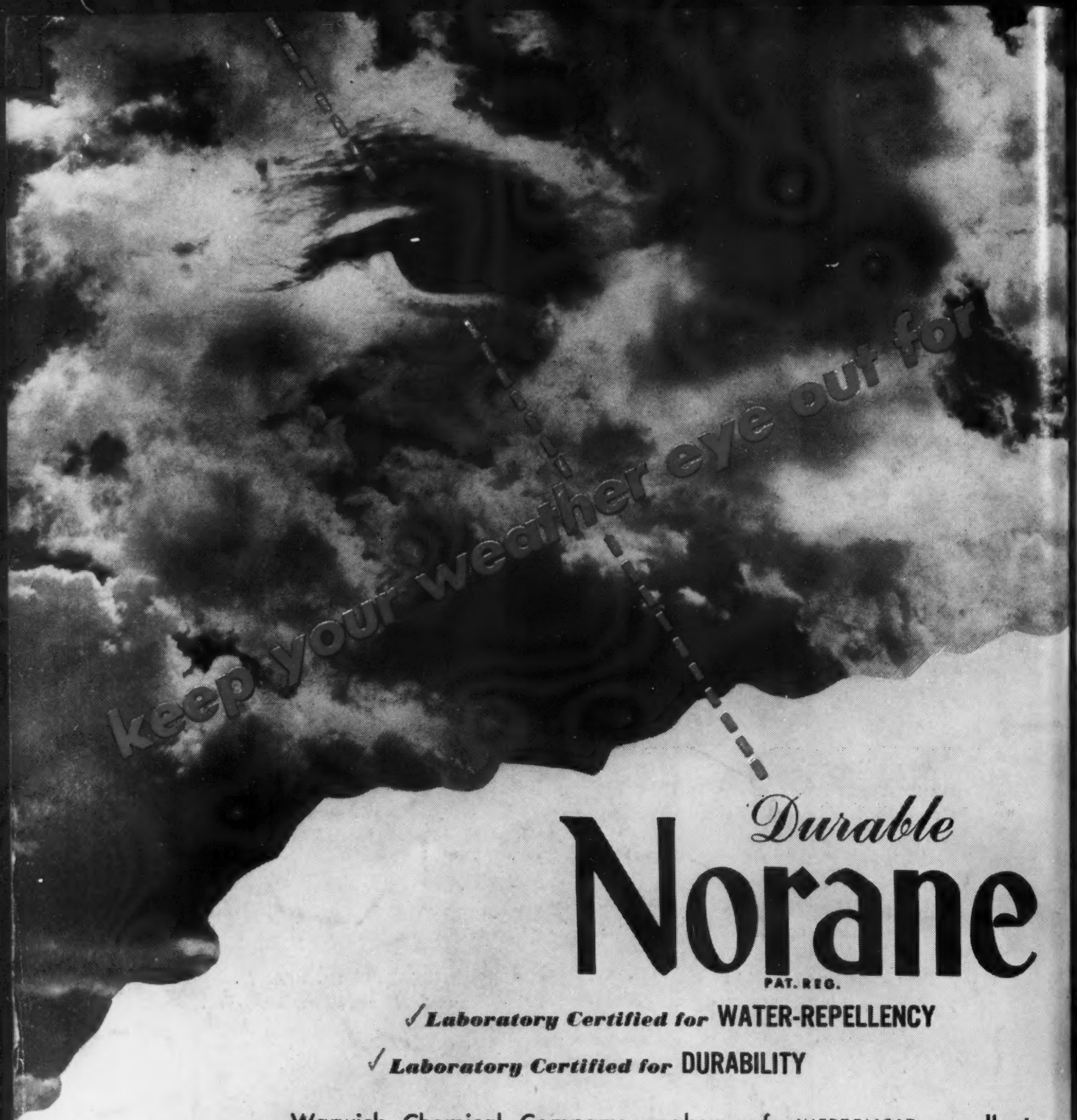

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